

Military Text-Books

THE PRINCIPLES OF WAR

VOL. I.



MACMILLAN AND CO., LIMITED

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TORONTO



# THE PRINCIPLES OF WAR

HISTORICALLY ILLUSTRATED

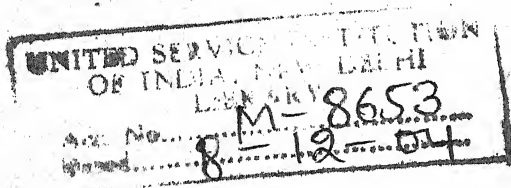
BY

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WITH AN INTRODUCTION BY

GENERAL SIR HORACE L. SMITH-DORRIEN  
G.C.B., D.S.O., A.D.C. GEN.

XV, 434  
VOL. I.



MACMILLAN AND CO., LIMITED  
ST. MARTIN'S STREET, LONDON

1914

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## PREFACE.

A QUARTER of a century ago the manuals issued officially for the instruction of the various arms of the service in their field duties dealt only with formations, inherited from the Peninsular and Crimean campaigns, and gave no guidance as to the solution of the tactical problems to be faced in modern war. They were, in fact, what their title implied, mere drill-books.

Thanks, however, to the reforming energy of officers, such as Lord Wolseley, Sir Evelyn Wood, and others, the Army had by no means to be content with this diet of dead men's bones. Instruction on more modern lines had been introduced at Sandhurst, Woolwich, and the Staff College, and garrison classes had been instituted at all large military stations. To assist these studies, and in default of official treatises, various tactical works of much value were written by individual officers, the most notable of these being the *Précis of Modern Tactics* by Colonel Home, and *Minor Tactics* by Captain Clery. Both these works, however, lacked official imprimatur, but this defect was made good by the historic method. In enunciating principles, the authors were always careful to test those principles, not on any *ipse dixit* of their own, but on

examples culled from the history of past campaigns, or on the teaching of some acknowledged master of war. Thus, the principles of war were proved to be directly evolved from war itself, and it was made evident that their re-application in practice to war should be the main object of their study.

The great debt of gratitude due to these writers and to the General Officers and Staff who, both in the field and in the lecture-room, taught on similar lines at Aldershot and elsewhere, should not be forgotten by the present generation. Nevertheless, the inadequacy of individual opinion as a foundation for the instruction of the Army in its war duties is self-evident. Common doctrine is essential to unity of purpose and action, and such common doctrine can only be prescribed and preached when officially sanctioned and inspired by the highest military authority.

The need for such inspiration was indeed recognized, and the preparation of tactical manuals officially taken in hand before the commencement of the South African war. The length of that campaign delayed their completion, but on its termination *Combined Training* was promulgated by the direction of Lord Roberts, then Commander-in-Chief. Separate training manuals for each arm of the Service followed. In 1904 the Directorate of Military Training, instituted at the War Office on the close of the war, and the Q.M.G.'s Staff appointed to deal with training in commands were reorganized and became, in conjunction with the old Intelligence Department, the General Staff, upon whom rests the responsibility of

preparing the Army for war in peace and directing its operations in war. The present *Field Service Regulations* and *Training Manuals* are some of the many advantages secured by that notable step in Army reform.

It is not too much to say that the principles laid down for our acceptance in these Regulations cover the whole field of tactics. It would, therefore, not only be an impertinence but a folly for any individual to attempt to add to them. Still less is it permissible individually to dispute or question that common doctrine upon the loyal acceptance of which success in war will depend. We may rest assured, and, indeed, know that year by year every stone of the foundations of our battle training is tested and tried by the trained experts of the General Staff, and replacement made, wherever the testing or the light of fresh war experience indicates the possibility of further strengthening.

The indisputable authority, however, upon which these official publications rest, as well as the need for condensation, rendered inapplicable the historic method of unofficial writers. Great though has been the gain of authoritative instruction, it is perhaps permissible to think that there has been a certain loss in the consequent separation of instruction in tactical principles from historical illustration and historical proof. Not only does such exemplification elucidate principles and facilitate their complete comprehension, but it tends so to store them in the mind of the student as to be ready for immediate use in war. Moreover, there is reason to fear that, notwithstanding the stress laid upon the study of military history at the Staff

College and in promotion tests, its true value is as yet but imperfectly appreciated by the Army at large. Except for examination purposes, the valuable historical works on military campaigns, now to be found in the reference library of almost every station, lie neglected on the shelves. The regimental officer seems seldom to realize that their study will assist him in the leadership of his men in war. Even amongst more senior officers there is a tendency to base the decision of tactical questions on their own individual experience or even on theoretical surmises, rather than on a full examination in the light of military history.

In the belief, therefore, that practice and precept should go hand in hand, and that it is of value to make it quite clear that all sound precept is based on practice, it has been thought useful to attempt to illustrate the principles set forth in *Field Service Regulations*, Part I., by a study of recent campaigns. The magnitude of those campaigns has necessitated that major rather than minor tactics should, for the most part, be considered.

It is fully realized, moreover, that only a comparatively small proportion of the principles laid down in the Regulations have been discussed and illustrated. Lack of time and restrictions of space have necessitated many omissions. Yet, though very conscious of these and other grave shortcomings, the writer ventures to hope that some of the lessons of modern war may have been sufficiently elucidated to assist his brother officers in preparing for their duties in the field.

E. A.

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*In a separate Volume.*



## INTRODUCTION.

BY GENERAL SIR HORACE L. SMITH-DORRIEN,  
G.C.B., D.S.O., A.D.C. GENERAL.

SOME months ago, my friend of 37 years—Major-General E. A. Altham—asked me to look through the MS. of this book, and so favourable were my criticisms thereon that he did me the honour of asking me to write an Introduction. I at once sat down, whilst the matter was fresh in my mind, and drafted one. The Author has now sent me a proof of his book, with his own preface, and I find in the latter, only expressed in better language, the pith of my own draft introduction. I cannot do better, therefore, than say that I entirely agree with the preface, and especially with his view that it will be difficult to improve the Field Service Regulations and the Training Manuals, which are prepared for our guidance from time to time, and kept up-to-date by the General Staff, for they are, in every sense, more suitable to modern warfare, where success depends so much on individual initiative and intelligence, than the old drill and training books written for the closer formations and smaller battlefields of an age gone by.

But to be able to grasp our present official books of instruction, it is essential that military history should be so well known by soldiers that, to enable them to illustrate and apply any of the general principles with which the F.S. Regulations abound, they can readily call to mind a fitting example of what has actually happened in war; and, alternatively, when reading military history, they may be able to recognize therein the actual incidents in war on which these principles are based. Now to be able to do this, very earnest study, entailing not only much time but power of application, amongst the pages of the numerous excellent works on all the wars which have ever taken place, is necessary, and it is on this account I commend to the notice of all officers, senior and junior, this most valuable production. Some chapters commence with quotations from the F.S. Regulations, involving a great principle of war, and then proceed in most graphic language to describe incidents which go to illustrate that principle in a way not likely to be forgotten; in others, the rôle of each arm of the Service is described, and examples of their respective achievements in war given, whilst further chapters deal with matters essential to the efficiency of a Field Army, such as communications, method of issuing orders, bivouacks, billets, and transport services, etc., and, in all cases, the subject matter is so ably explained as to paint a picture which can be clearly understood even if the reader may have no experience of war.

Not only is such an excellently arranged treatise

invaluable to young students struggling to master the art of war and pass their promotion examinations, but equally so to a senior officer who, in the course of instruction, say, at a conference, is rubbing in a principle and is at a loss for an example from history to drive it home.

Apart from its intrinsic value as a military study, and as such I regard it as a classic work worthy of a place with Henderson's "Science of War," the literary style of the book is such that it is a pleasure to read it.

I particularly draw attention to the very telling lessons drawn in Chapter I., which the Author deduces from a careful study of the Franco-German, the Russo-Japanese, and Balkan Wars, viz.:

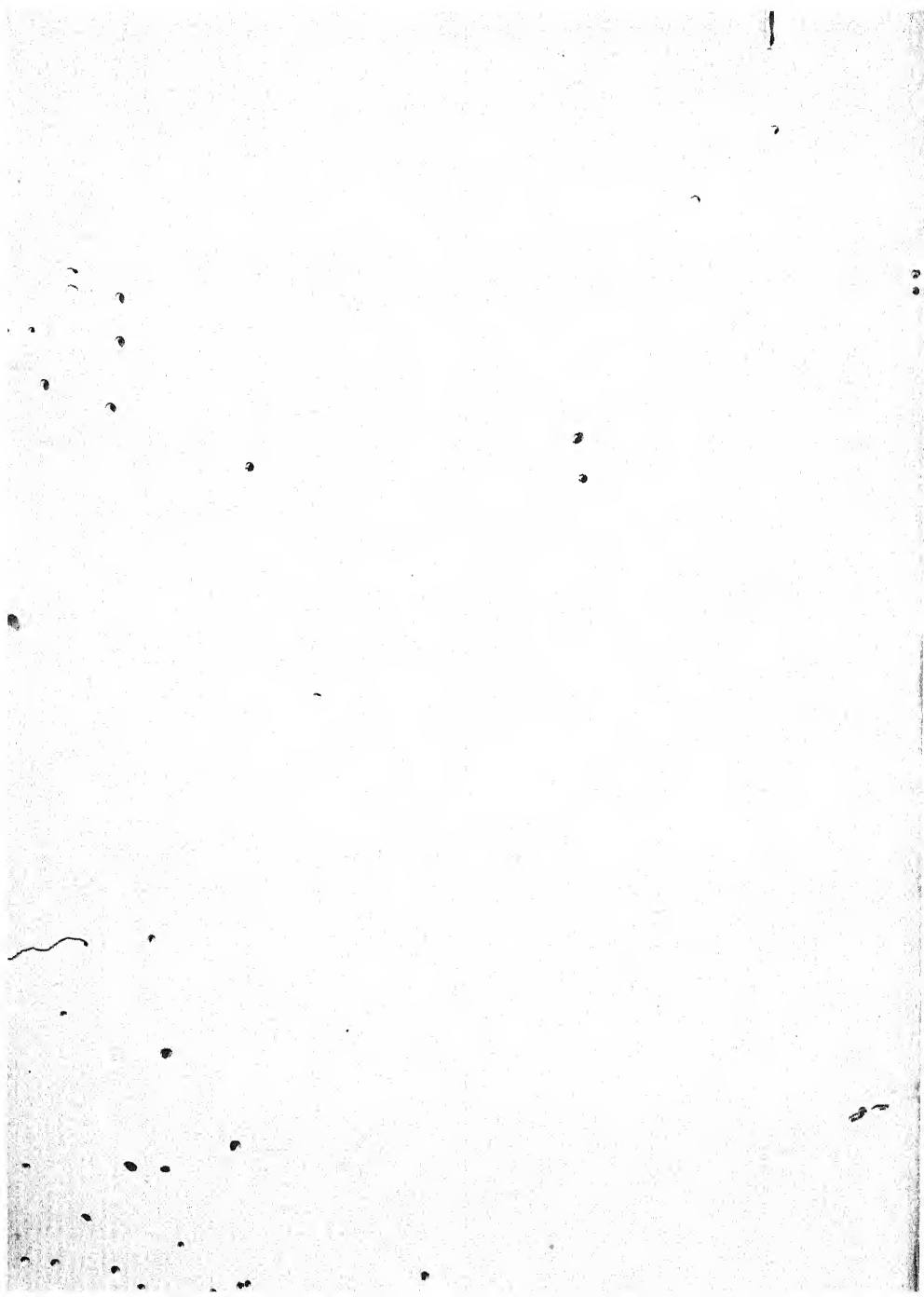
"That preparation for war is a national duty, the neglect of which involves humiliation and disaster."

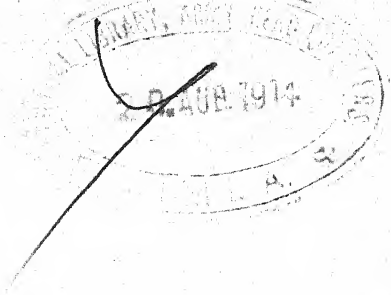
It is therefore, not only to soldiers that I commend this excellent study, but to all who have the permanence of the Empire at heart, and who are anxious to see the Union Jack placed beyond the possibility of being lowered by any enemy, great or small.

H. L. SMITH-DORRIEN,  
*General.*

SALISBURY,

28th October, 1913.





## CHAPTER I.

### THE FACTORS OF SUCCESS IN WAR.

"Success in war depends more on moral than on physical qualities. Skill cannot compensate for want of courage, energy, and determination; but even high moral qualities may not avail without careful preparation and skilful direction. The development of the necessary moral qualities is, therefore, the first of the objects to be attained; the next are organization and discipline, which enable these qualities to be controlled and used when required. A further essential is skill in applying the power which the attainment of these objects confers on the troops. The fundamental principles of war are neither very numerous nor in themselves very abstruse, but the application of them is difficult and cannot be made subject to rules. The correct application of principles to circumstances is the outcome of sound military knowledge, built up by study and practice until it has become an instinct."—*F.S. Regulations*, part i. section 1 (2).

In the study of any science it is essential to start from sure foundations. Theoretically, perhaps, these should be laid by the student himself. In practice he has of necessity to be content to build up from other men's work. To the student of war such assistance is the more indispensable since war is a science evolved from the experiences of campaigns, the complete study of which would take more than a lifetime to master, a study moreover which, unless constantly broken, or rather accompanied and elucidated by actual practice in troop leading, would produce but the dry unger-

minating grain of theory, and not the full harvest of fighting efficiency. The leader of troops must verify for himself by systematic study the true principles of war;<sup>1</sup> he must refresh his knowledge by critical examination of its latest examples; yet, since his aim is not mere knowledge, but that capacity in the field which springs only from the combination of knowledge with practice, he must of necessity start his studies by building on other men's foundations. The goal of all individual military instruction is efficiency in the field; the goal of army training is success in war. Unless such success can be reasonably assured, military expenditure is useless and even unjustifiable. Thus the General Staff have deemed it helpful to commence the opening chapter of the Regulations issued for the guidance of the army in war by a clear statement of the essentials on which success in war depends.

These essentials are three in number, viz.: (a) certain moral qualities, in particular, courage, energy, and determination; (b) war preparation, which falls naturally under the two heads of organization and discipline, the latter term being used in its original and widest sense; (c) skill in applying the power produced by the combination of (a) and (b). These three factors are in a measure interdependent. Not only do organization and discipline, as the General

<sup>1</sup> Colonel Henderson (*Stonewall Jackson*, vol. i. p. 182) remarks: "If Napoleon himself, more highly endowed with every military attribute than any other general of the Christian era, thought it necessary to teach himself this business by incessant study, how much more is such study necessary for ordinary men?"



Staff point out, "enable the necessary moral qualities of courage, determination, and energy, to be used when required," but those two powerful agencies do of themselves generate and mature those three qualities. Take, for instance, the pre-eminent military quality, that of courage. It is strongly influenced, no doubt, by physical, climatic, and racial conditions; but eliminating these for the moment, it may be accepted as a general truth, that of any given number of men taken haphazard, a very small percentage are fearless, or practically fearless, a small percentage are cowards, the large majority are not wholly cowards, not wholly brave, but must be placed in an intermediate colourless class. All armies are mainly dependent for their raw material on this intermediate class. Untrained men of this type, if exposed to sudden danger, tend to relapse into a panic-stricken mob. At the best they are incapable of combined effort, involving any continuous strain of risk or hardship. But military organization, and above all discipline—i.e. moral and physical training for the individual and collective duties of a soldier—so raise the moral standard of these individuals as to convert them into good reliable fighters, endued as a community with the determination and physical and moral courage necessary to success in war.

But, though it is true that the moral qualities requisite in the soldier are largely dependent for their development on the application of organization and discipline, it is also true that a reliable army cannot be built up from raw material in which the

natural seed of those qualities has become incapable of germinating. A race, which through servitude on the one hand or the indolence of prolonged peace on the other, has lost the fighting instinct of manhood and the spirit of self-sacrifice, is no longer capable of producing soldiers endowed with battle discipline. Especially, too, is this true when a race has lost or never fully acquired a national spirit and national organization, or when it has ceased to identify itself by personal service with its army and navy. The Greeks' craving for municipal independence bereft them of national unity, and so, at the very summit of their intellectual greatness, left them an easy prey for Macedonia and Rome. The citizens of that same Rome, after making her mistress of the world, preferred *ludos et circenses* to personal military service, and were in turn overwhelmed by the inflowing tide of vigorous fighting barbarism. It is in fact during the simpler and more primitive stages of racial and tribal existence that the moral qualities of courage and self-sacrifice, the complete subordination of individual advantage and individual comfort to the good of the community, are most apparent as a natural growth, and seem to need least artificial cultivation. The hill tribes of the North-west frontier of India lack both organization and discipline, and yet have often enough proved troublesome adversaries even to the best trained troops. Nevertheless it must not be forgotten that lack of national unity and lack of military organization and discipline have always deprived these tribal

raids of any chance of permanent success, and that the splendid fighting qualities shown by the Zulus on the battlefields of a generation ago owed not a little to the discipline and organization acquired under the eye of Chaka, the Bantu Napoleon of South Africa.

Fighting qualities therefore on the one hand, and organization and discipline on the other, are both dependent on and yet independent of each other. It is only by a combination of both that a nation or a body of men can be moulded into a perfect fighting machine. Similarly, too, leadership is a vital factor in war, and may exist quite apart from the perfection or imperfection of the troops to be led. The skill of a great leader may be manifested in the handling of partially trained and ill-disciplined troops as much or perhaps even more than in the command of a thoroughly efficient army. The very imperfection of the troops they controlled add lustre to the reputations of commanders, such as Cromwell, Lee, Stonewall Jackson, Botha, and De Wet. Yet the first care of Cromwell, as of all great generals, was to draw to his standard men of the moral quality needed in the soldier; his next was to organize and discipline them, for upon his success in these essentials depended his ultimate success in war.

It may be admitted then that, though the primary factors of successful war are three in number, yet any two, or perhaps in rare cases any one may, under certain conditions, achieve much. If both the contending sides are deficient in one or more factors, victory, unless the numerical strength is wholly

unequal, will ultimately rest with the side which most closely approximates to a combination of all three. Wars, moreover, under modern conditions are due not to disputes between Sovereign and Sovereign or between Government and Government, but to a clashing of two great tides of national needs, national expansion, or national ambitions, each compelled by natural forces to thrust aside the other. They are the concern therefore no longer merely of the head of the State and of the armed forces which he has taken into his pay, but of the nation itself, and will be decided in the nation's favour, only when the moral qualities, the organization, the discipline and the leadership of the nation in arms are such as to suffice to compel its adversary to conform to the nation's will.

But the fruth of these principles can best be determined by a brief examination of the causes which determined the issues of four campaigns of modern times.

#### I. THE CIVIL WAR IN THE UNITED STATES.

The great struggle between the Northern and Southern States commenced with the Confederates' attack on Fort Sumter on April 13, 1861, and practically terminated with Lee's surrender at Appomattox Court House on April 9, 1865.

At the outbreak of the war the white population of the Northern States was approximately four times that of the Southern, viz.: twenty-one and a half millions to five and a half millions.

*"In material resources, in business capacity, and in mechanical skill, the South could not compare with the North. The North was largely a manufacturing community, the South was almost entirely agricultural. The South depended upon the North for many of the necessities of life. The North had almost entire control of the military and naval resources of the country."*<sup>1</sup>

Both sides were, as regards their land forces, equal in their total unpreparedness for war. The North had, it is true, at its disposal the United States army, but the total strength of that army was but 16,000 officers and men, and of these only 3000 could at the outset be spared from the forts on the Indian frontier for the contest with the South. Moreover, of 1200 officers educated at West Point and available for service in 1861, one fourth were Southerners, and these, almost without exception, resigned their commissions in the Northern army and threw in their lot with their own States.<sup>2</sup> Many of the officers who were thus lost to the North had seen service in the Mexico campaign. Some of them, such as Robert Lee, Albert Sidney Johnston, Joseph E. Johnston, and J. Jackson, were the ablest known leaders in the American continent. Indeed Lee had been proposed for or, according to some authorities, actually offered the command of the Northern army.<sup>3</sup>

<sup>1</sup> *The Civil War in the United States*, Wood and Edmonds, p. 25.

<sup>2</sup> "The N.C.O.'s and men of the United States Army were either Irish or German, without State ties, and they had consequently no inducement to join the South." *Stonewall Jackson*, by Lt.-Colonel Henderson, vol. i. p. 104, second edition.

<sup>3</sup> J. B. Stuart, the best of several brilliant Confederate cavalry

Both North and South had practically to create an army *de novo* from the raw material, first of volunteers, and, later, of pressed men. The Southerner was an out-of-doors man, a natural horseman, a good shot, the possessor of a sportsman's skill in scouting. The Northerner, for the most part a townsman, engrossed in commerce, had formed his habits of life in the store, the hotel or the counting-house. To him the saddle and the bivouac were a new experience, and war itself a disagreeable waste of time, lacking all attractions, and to be faced only as a national duty. The story of the terrified rabble at Bull Run, and the amazing number of failures in the commissioned ranks, and of desertions from the rank and file throughout the war, throw strong light on the defects of an army hastily raised from such material.<sup>1</sup> Yet, notwithstanding these defects, the Northerners were men of the same race as the Southerners, and, as the war went on, became stern soldiers determined to see the bloody issue to the end. If both communities lacked at the outset military organization and discipline, both had their full share of courage, energy, and determination, and each was alike inspired with a whole-hearted belief in the righteousness of its own cause. The North

officers, was a captain of dragoons in the United States army at the outbreak of war.

<sup>1</sup> "In the Union Army during the war 274 officers were cashiered, 204 discharged with dishonour, 3,226 discharged for incapacity, 2,433 discharged without stated reasons, and 22,271 resigned, an aggregate loss in officers from other causes than war wastage of 28,398!! In the same army 216 officers and 189,829 men deserted during the war; 85,000 left the colours after the defeat at Fredericksburg." *The Valour of Ignorance*, by Homer Lea. Harper Bros. Appendix, Table VIII.

fought for national union and national existence. The South for States rights and States self-government.<sup>1</sup> The accidental clash of these two principles over an ethical dispute served somewhat to accentuate the bitterness of feeling, but for both North and South the constitutional question was throughout the war the real issue, and to both any compromise on this appeared impossible. Thus the morale of the two contending forces was stiffened with that grim determination and steadfastness which a struggle for constitutional rights or political freedom ever engenders in Anglo-Saxon communities.

An exact comparison and assessment of the Northern and Southern leaders in this great war would be a difficult and invidious task. Lee and Stonewall Jackson stand out pre-eminent on the Confederate side. The former's strategic genius justly entitles him to be ranked amongst the few really great soldiers of the nineteenth century, whilst the latter's death at Chancellorsville was an irreparable loss to the Southern cause. In the Northern armies, two commanders, endowed with great ability and personality, were ultimately found, Grant and Sherman; but during the earlier phases of the war the higher direction of the Federal armies was seriously hampered by political intrigues and vacillation at Washington. Mr. Jefferson Davis, the Confederate President, had sufficient know-

<sup>1</sup> For interesting evidence as to this see chapter ii. of *A Soldier's Recollections*, by Randolph M'Kim, but for an admirably impartial dissection of the true causes of the war, Lt.-Colonel Henderson's *Stonewall Jackson*, vol. i. chapter iv. should be read.

ledge of war requirements to avoid in part such errors; yet he based on a certain limited military experience an exaggerated belief in his own military abilities, and thus took upon himself to embarrass Lee's brilliant leadership by interference from time to time in his strategical plans.<sup>1</sup>

In the three essentials for success the balance between the Federals and Confederates lay, therefore, not unevenly. Equally endowed in moral qualities and not altogether unequal in the matter of leadership, they were at the outset equally devoid of organization and discipline. Thus the causes of the decisive final success of the North must be looked for elsewhere.

Its great advantage in population and its superiority in material resources have been already alluded to. To these and still more to the possession of sea command may be attributed the North's final triumph. The command of the sea, secured by the loyalty of the United States navy, carried with it the immense gain of strategic mobility in the eastern theatre of war, by reason of the exposed coast line, and in the western by its gift of access to the greater waterways of the Red River, the Mississippi, the Tennessee, and the Cumberland. But it did more than this. It cut off the Confederates from commercial intercourse with the outer world, rendered useless the one great product—cotton—on which their financial equilibrium

<sup>1</sup>The relations between Lee and Davis are very well dissected in chapter iii. of *Lee, the American*, by Gamaliel Bradford, Constable & Co. Ltd., 1912.



depended, and deprived them of the means and opportunity of maintaining and replenishing the supplies and material requisite for armies in the field. It was the possession of an organized and disciplined navy which secured ultimate victory for the North, and yet not until after four years of bitter war, in which the issue often seemed very doubtful. At the outset the supporters of the Federals were convinced that easy success would be achieved in three months. Lord Wolseley, indeed, recorded the opinion that, if the Federal government had but had at its disposal one single organized and disciplined army corps, when hostilities commenced, that forecast might have been verified.<sup>1</sup> The lack of so small a modicum of organization and preparation for national defence entailed on the North the expenditure of the lives of half a million of its citizens and of some £700,000,000.<sup>2</sup>

## II. THE FRANCO-GERMAN WAR, 1870-1.

The story of that brief struggle, the first six weeks of which sufficed to surround the organized armies of France with a band of iron, and to lay her head low in the dust of national humiliation, is perhaps the most striking exemplification in military history of the parable of the foolish virgins, of the penalty of neglect of war preparation. Yet, when France declared war over the petty matter of the form in which a

<sup>1</sup> v. Introduction to the second edition of *Stonewall Jackson*, by Lt.-Colonel Henderson.

<sup>2</sup> An article entitled "Gold Reserves in Time of War," in the *National Review* (June, 1911) assesses the total cost of the Civil War to the North and South in men at about 800,000, in money at £1200,000,000.

proposed nomination of a Hohenzollern prince for the Spanish throne should be withdrawn, her destinies were in the hands of a Napoleon. Frenchmen inspired with the memories of Jena and Auerstadt eagerly expected great victories eastward of the Rhine, and the armies of France contained many officers and men of ripe war experience, culled on the battlefields of Italy, the Crimea, and Algeria, the sons and grandsons of the men who had made "le petit Caporal" master not only of Germany, but almost of all Europe. Moral qualities were not therefore lacking : they have never yet been lacking in the armies of France. Yet in this campaign the morale in the German ranks was keyed higher. The flame of war, it is true, had been skilfully fanned by the diplomatists of both sides : by Bismarck, partly because for political reasons he regarded the struggle as sooner or later inevitable, and judged the military situation opportune for Prussia, and partly because it was clear to his far-seeing mind that a declaration of war by France would unite at once all German hearts and bring to immediate fruition the dream and object of all his diplomacy, a united German Empire, centred on Berlin ; by the French Emperor, since the success in war and diplomacy necessary to the continuance on the throne of his dynasty had of late been overshadowed by Maximilian's tragic fate in Mexico, by Prussia's brilliant victories in Denmark and at Königgrätz, and by the failure of his attempts to obtain rectification of the Rhine frontier and to arrange for the partition of the Turkish Empire. It needed, in fact, some great dramatic

stroke to re-establish the Napoleonic prestige and authority. It needed a similar stroke to consolidate Germany.

*Delirant reges, plectuntur Achivi.* The war in its origin was in no sense a people's war. Its causes can be plainly traced to the cynical wire-pulling of statesman and Emperor. Yet Bismarck's expectations were not disappointed. Not only was the South German States' military alliance with Prussia transformed in a moment from an irksome burden into a sacred obligation, but all Germany, stung with the possibility of another Napoleonic scourge, flamed up with the spirit of patriotism and stood to arms a united nation.<sup>1</sup> On the French side, notwithstanding the Paris mob's cries of "à Berlin," it may be doubted whether at the outset any similar national feeling was really evoked. Outside Paris there was but little enthusiasm for the war, and it was only after the surrender of MacMahon's whole army at Sedan that the nation itself awoke to the gravity of its danger, too late for victory, though not too late for honour.

Thus, in moral qualities in the first phase of the contest the advantage lay with the armies of Germany. Clausewitz rightly tells us that the spiritual in war is more important than the material. But that sound aphorism has, like others, its limitations. The true decisive factor in the contest between Germany and France was the great superiority of the former in the

<sup>1</sup> Thus in his order to the army of 2nd August, 1870, the King of Prussia declared: "All Germany rises with one accord to arms against a neighbouring State, which has unexpectedly and for no cause declared war against us." *German Official History*, vol. i. p. 90.

second essential to success in war—organization and discipline—or, in other words, preparation for national defence. Modern history records no greater miracle than the resurrection of the Prussian army\* from the grave of Jena to play a victorious part in the final campaigns of 1814 and 1815, a revival due as much to the profound national spirit of indignation roused by the tyranny of Napoleon, as to the brilliancy of Scharnhorst's well-known scheme of military re-organisation. Yet all fighting machinery, however good originally, rusts unless periodically overhauled and tested. Just as the military system founded by Frederick the Great was found at Jena to be utterly antiquated, so too, though in a lesser degree, Scharnhorst's system, when tested by a series of mobilizations during the years 1848-1859 was found, though still sound in principle, to need in its details readjustment to the national growth. The reforms carried out in 1860 under the guiding hand of von Moltke, just appointed Chief of the Staff, developed further the principle of equally distributing over the manhood of the whole nation the duty of national defence, and readjusted the machinery. Moreover, after the 1866 campaign the Prussian military system was introduced into all the other States of the North German confederation, as well as into Bavaria and Wurtemberg, the troops of the allied German States being thus trained and organized on uniform lines and prepared for being moulded into one army.

The true fighting value of this great military combination lay in fact not so much in its numbers as in

its organization, homogeneity, and internal machinery. Organized on the territorial system, with permanent brigades, divisions, and army corps, quartered always in peace at the same stations, recruited locally, and serving in peace under the commanders and staff who would lead them in war, it was possible to decentralize in a complete manner the mobilization scheme for the army, and to delegate to the army corps commanders the responsibility for working out in peace time all the details of mobilization, and for carrying them out on receipt of telegraphic orders. Each army corps, under this system, obtained from its own territorial area on mobilization the men, animals, and equipment needed to complete it for war, the equipment being stored locally under the supervision of the corps commander. This principle has since become a commonplace of sound military organization, yet its universal acceptance in no way diminishes the reputation of the German staff, who were the first to give it practical effect, and the first to reap its fruits in war.

In France very different methods prevailed. Theoretically the French army was recruited on the national system, and the obligation to serve lay on every French male citizen. Practically, substitution allowed the duty of service to be often evaded. The reserve was comparatively weak in strength, and more than half of it untrained. The whole process of placing the army on a war footing was centralized in the hands of the War Office, personnel being ordered to join units from distant stations, and equipment and material being issuable only from a few large

depôts. Disastrous confusion inevitably resulted. The troops were hurried to the frontier,<sup>1</sup> in the hope that the personnel and equipment, which their *cadres* lacked, might overtake them before they were caught in the storm of war.

The project for the possibility of war with France, prepared by the Prussian General Staff some eighteen months before the outbreak of hostilities, took, as its primary object, the mission "to seek out the enemy's main force, and when found to attack it."<sup>2</sup> It contemplated the organization of the German troops into three armies, assessing their aggregate strength at 384,000 men, and the completion of their strategic concentration on the frontier, mobilized, equipped, and ready to advance on the twentieth day after the issue of mobilization orders. The strategic concentration was so planned as to permit of effective counter-strokes against the enemy, if he should attempt to advance before mobilization was completed, but its leading idea was from the outset to force his main army in a northerly direction away from Paris.

This project's estimates of time and numbers were more than fulfilled. Orders for mobilization were issued on the night of the 15th-16th July. It was completed on 31st July. By the 3rd August the three field armies, comprising 462,300 infantry, 36,800 cavalry, and 1384 guns were assembled at their strategic rendezvous ready to move forward.

<sup>1</sup> Any chance of the mobilization working smoothly was in fact finally nullified by the commencement of the strategical concentration on the first day of mobilization.

<sup>2</sup> v. pp. 50-56, *German Official History*, vol. i.

The French Government, on the other hand, called out its army reserve on the 14th July. The French Staff's forecast assumed that the troops would be complete at their stations, ready to march on the twelfth day of mobilization. Napoleon was advised that he could count on a field army of but 300,000 combatants. The numerical superiority of the enemy was thus in part anticipated, but it was hoped to counterbalance this by an early assumption of rapid offensive across the Rhine. These hopes were to be utterly falsified. On 28th July Napoleon joined the field army to assume executive command. Scattered over a line 150 miles long, with rear detachments stretching back as far as Chalons and Paris, not a single one of his corps was complete or fit to take the field, while its aggregate strength was still but 210,000 men.<sup>1</sup> The railway lines were blocked, and the further transport of reserves suspended. Regimental and corps transport, horses, ambulance, supplies, supply columns, and maps were deficient. The mobilization of the army had broken down disastrously.

Nor in battle efficiency were the scales even between the two adversaries. The French army's inferior muzzle-loading gun, it is true, was counterbalanced by the superiority of the chassepot over the German needle rifle, and by the hopes entertained of the new mitrailleuse. Both armies had been trained on an obsolete system, for even in the German ranks the tactical lessons of the first experiences with the breech-

<sup>1</sup> Later, according to the *German Official History*, the French army attained a strength of 272,000 men.

loader in the brief 1866 campaign were as yet but imperfectly grasped. Yet that offensive spirit, which the 1870 and every ensuing campaign has shown to be the essence of success in modern war, saturated the minds of German officers and men, and sufficed, notwithstanding errors in detail, to guide them on the right path to victory. On the French side the experiences of 1866 were read otherwise. Violating the traditions of the Napoleonic victories, and disregarding the ardent temperament of the French soldier, the French Staff conceived that the rapid fire and long range of the new rifle favoured defensive tactics, and so committed the armies of France to a cult of positions.

Moreover, throughout this great game of war Germany enjoyed a supreme advantage in possessing a Chief of the Staff who had mastered by profound study the strategical lessons of the past, and had organized and forged the Prussian General Staff into an instrument on which reliance could be placed to ensure the loyal and intelligent execution of his orders. The French army had no such head and no effectively trained staff. If it suffered profoundly from administrative centralization, it suffered equally from the lack of unification in command, and defective higher leadership.

Thus in all the essentials to success in war France entered on the contest with the dice hopelessly loaded against her. She fought out the issue with courage and resolution, but no gallantry and no determination can save a nation from the results of neglecting war



preparation. The penalty paid by France was the overthrow and surrender of her armies, the capture of her frontier fortresses, the investment of her capital, the loss of two fair provinces, and the payment of a huge money indemnity.

### III. SOUTH AFRICAN WAR.

It may appear invidious to attempt a dissection of the causes of victory and defeat in a struggle, our opponents in which have since become Great Britain's fellow-partners in the responsibility of Empire. But the political differences which occasioned the war are so obliterated, that a stock-taking of its military factors can be faced without danger of resuscitating ill-feeling, and this the more readily, seeing the Dutch, like all good fighters, have, from the moment hostilities terminated, been ever willing to discuss freely with British soldiers its incidents, as comrade with comrade. The main cause of the war has generally been conceived to be racial misunderstandings. In part no doubt this is true, yet Boer and British are both of Teutonic origin and racially so near akin, that in the moral qualities, which make for success on the battlefield, they approach closely the same standard, and differ only in those details that environment and manner of life affect. The isolation of the home on the veld, and the importance to the women and children of the life of husband and father tended to foster deliberation, caution, and the feeling that, given such conditions, to live is of more service to the community than to die. Yet the history of the great

trek, of Dingaan's day, of that feat of arms, the storming of Majuba, of the fights at Nicholson's Nek, Wagon Hill and Spion Kop—to disregard altogether the more disciplined courage shown in the latter phases of the war under Botha, De Wet, De la Rey, Smuts and others—establishes that two and a half centuries of struggle in a new land with savages and the forces of nature deepen and strengthen the determination and resourcefulness of a free white people.

The qualities of the British soldier need but little comment. They are finely summed up in one sentence of Sir Redvers Buller's despatch reporting how, after many losses, failures and even mistakes in leadership the Natal Relief Force won its way into Ladysmith:—"It was the men who did it." Yet in two points at that period of the war the rank and file of the British Regular force differed from the burghers. In resourcefulness, in veld craft, the latter had great superiority, a superiority counterbalanced by the disciplined courage which rendered the former capable of persevering to the end in the face of heavy casualties and repeated disappointments. Of those comrades from the South African colonies and the over-sea Dominions who came to the British soldiers' assistance, it will suffice to say that they proved themselves worthy of their kinship.

Thus in moral qualities the balance between the two contending sides lay not uneven. In the matter of war preparation the balance should have been wholly in favour of the greater, the richer and the more experienced State. Had this been the case in

reality, the duration of the war would have been greatly shortened, at least half its cost in lives and money saved—probably indeed the war itself would never have taken place. Against the defects in the Boer commando must be set the lack at that time in the British army of a permanent organization of brigades and divisions, and the backwardness of definite preparation for this particular campaign. Yet, notwithstanding these shortcomings, the British force reaped great advantage over the Boer in its Staff, in its regimental system, and, above all, in the possession of the material and personnel needed for the supply, transport, sanitary, and other departmental services.

From a British point of view the campaign divides itself into three well-marked phases :

- (a) The defensive phase, covering the period from the outbreak of hostilities to Lord Roberts' concentration for the advance to the Modder.
- (b) The offensive phase, from the commencement of Lord Roberts' advance to the break up of the Transvaal field army on the eastern frontier in September, 1900.
- (c) The guerilla operations.

The lack of success attending the British arms in phase (a) appeared to the majority of contemporary critics to be its dominant feature. The reverses then experienced were, it is true, unexpected, and were in some measure due to a deficiency in the third essential to success in war, *i.e.* "skill in applying the power

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inherent in an organized and disciplined force," but chiefly they must be attributed to the loss of strategical initiative, rendered inevitable by the superior numerical strength and greatly superior mobility of the Boer forces, an advantage emphasized by the vastness of the theatre of war and the peculiarities of its terrain.

Yet, looking back at the events of that period with the more impartial focus that the lapse of a decade affords, it seems a matter for investigation why the Boers failed to wrest fuller results from the one critical period of the campaign, in which the attainment of a measure of final success was perhaps possible for the Republics. Two main errors stand out in the Boer conduct of this phase of the campaign,—first, their waste of time, men, and moral energy in the investment for political reasons of Kimberley and Mafeking to the neglect of the penetration of the heart of Cape Colony, where large accretions to the Boer commandos might have been recruited and the main line of the British advance severed; and secondly, the reliance on mere investment, coupled with desultory bombardment, for the reduction of those towns and (excepting only the attack of January 6) for the reduction of Ladysmith, which, unlike the other two, formed with its garrison an objective of real strategic importance. Both these errors are directly attributable to deficiencies in war essentials; the first to lack of skill in the higher direction of troops, and the second to the absence of that battle discipline which enables a commander to order an assault, confident that his

troops will not shrink from the necessary sacrifice of life.

The second and third phases of the campaign, though of deep interest to the British soldier both from national and professional points of view, do not demand any close analysis for the purposes of this chapter. In the second it will suffice to note that the British success was due mainly to three causes :

- (a) The moral qualities which reverses developed in the British nation and its sister dominions.
- (b) The consequent organization of a complete and adequate force.
- (c) The strategic skill of its Commander-in-Chief.<sup>1</sup>

In the third phase the prolonged resistance of the Boers stands out for admiration. Inspired by a true spirit of patriotism, it was carried out with notable courage, determination, and energy, and was greatly stiffened by the battle discipline, instilled in the burghers by the experiences of the prolonged campaign, and enforced with increasing vigour and authority by their leaders. Yet, the final success of the British arms may too be taken as an exemplification of the value of organization specially adapted to the circumstances of abnormal warfare, to the sustained discipline of troops, war-worn by continuous service in the field, but still retaining their devotion

<sup>1</sup> This skill was, however, hampered by the clamour of a certain section of public opinion at home, which, debauched by the easy successes of recent small wars, was not prepared to pay the price of victory.

to duty, and to the skill with which operations of peculiar difficulty were directed and controlled.

The guerilla phase in South Africa lasted but eighteen months. In La Vendée the French Republican Government took three years to quell the insurrection of peasants. In the Peninsular war the armies of Napoleon occupied Madrid in 1807. Save the short Talavera campaign in 1809, and the investment of the frontier fortresses of Badajos and Ciudad Rodrigo in 1811, Wellington was not able to assume the offensive in Spain till 1812. In August of the previous year the effective strength of the French force in Spain amounted to no less than 372,241 men and 52,467 horses.<sup>1</sup> This immense force, even after four years' continuous war, did not suffice to crush out the resistance of the ill-armed, ill-led and ill-organized Spaniards. In the face of these instances of other guerilla campaigns it behoves the military student rather to note the factors which led to the comparatively speedy termination of the guerilla phase of the South African war, than to seek for apologies for its duration.

#### IV. THE RUSSO-JAPANESE WAR.

Lord Rosebery, in commenting on the war of the Austrian succession in his recently published memoir on the great Chatham, lays bare the moral contrast between the contests of the eighteenth century and those which preceded and followed it. He tells us :

<sup>1</sup> v. "The Imperial Muster Rolls," quoted on p. 1029, vol. viii. Alison's *History of Europe*.

"Amidst all these stately figures and famous slaughters we see the central fact of the period, the shameless and naked cynicism of the eighteenth century, which, turning its back for ever on the wars of faith and conviction, looked only to contests of prey. And so it continued till the great Revolution cleared the air, and, followed up by the poignant discipline of Napoleon, made way for the wars of nationality."<sup>1</sup> There are limitations, of course, to so sweeping a condemnation. It was a true national instinct which led England to play her part in the maintenance of the balance of power in Europe, and the Empire in India, Canada, and the West Indies, which accrued to her from that action, cannot be regarded as a prey deliberately marked down, or as the stakes originally played for. Yet in the main the wars of the century which preceded the French Revolution were due to dynastic and personal ambitions, and not to national impulses or national needs. The will of despotic or of oligarchical governments was the motive power of those campaigns, while the instruments of that will were small professional armies, so divorced from the true life of the nation and so unrepresentative of its manhood as to be regarded with suspicion as a possible danger to political freedom. The nineteenth century swept away these political conditions and ideas, and with them, save only in Great Britain, the military system of the eighteenth century disappeared into the dustbin of history.

<sup>1</sup> *Chatham: His Early Life and Connections*, by Lord Rosebery, Humphreys, 187 Piccadilly, W., 1910, p. 215.

The theory of the *levée en masse*, engendered by the patriotic enthusiasm of the French Revolution, was based on the doctrine that it is incumbent on every able-bodied member of a free community to be ready to bear arms in its defence. The general acceptance of this doctrine throughout continental Europe involved the abolition of the small professional armies of the past, and the training and organization of the manhood of the whole nation as a national army, a democratic evolution, which coincided with and was in fact the logical result of the substitution of democratic political institutions for absolutism and oligarchies. Henceforth, therefore, the will of the people became the true motive power of wars, and national armies the instrument. Thus war has reverted to its primitive and more legitimate type, and become again the final arbitration of clashing national interests and national desires. Thus too the dynamic moral force of an army is dependent on, and commensurate with that of the nation.

The moral qualities, which the campaign of 1904-5 revealed in the navy and army of Japan, qualities which won the admiration of the civilized world, well exemplify these conclusions. The overthrow of Japanese feudalism in 1868 and the organization of the Japanese nation on a modern basis stand out as unique events in the history of the world by reason of the patriotism which, in one short year and with but little bloodshed, carried through a political and social revolution not less in magnitude than that accomplished earlier in European States after decades



and even centuries of civil war, political proscriptions, and internecine struggles. The ease and rapidity with which Japan thus divested herself of mediævalism, and in a few months put on the whole armour of modern nationality, can only be attributed to the singleness of purpose which actuated the whole nation. The two previous centuries had seen such national evolution effected in Europe by the strife of class against class, of continuous bloody struggles between sovereign, nobility, middle-class, and people. In Japan all classes, united in splendid self-surrender, achieved national regeneration by one common effort. It was an essential part of this regeneration that the armed forces of the state should at once be built up on national lines and in conformity with the most efficient examples. The receptiveness of mind, which characterizes modern Japan, enabled her land forces to assimilate the territorial organization, the thorough training and the offensive spirit of the German army, while her fleet took as its standard of efficiency the British navy, and sought inspiration from the white ensign's traditions. Both services were united in intense devotion to their sovereign, in whose person the ideal of national unity and national freedom was centred.

The fervour of this national spirit was fanned to a white heat by the causes of the war with Russia. For more than thirty years, ever since China's cession of the eastern coast of Manchuria to Russia in 1860, and the Russian attempt to seize the Island of Tshushima in 1861, it had been evident on the one

hand that the desire of the St. Petersburg government to obtain free and untrammelled access to the Pacific would not be completely fulfilled until Russia secured the southern shore of Korea and thus commanded the Korean Straits, and, on the other, that the control of those waters was essential to Japan's independence. The patience and self-restraint, displayed by the Japanese government in accepting the humiliation of the Russian occupation of Sakhalin in 1875 and the still greater humiliation of the retrocession of the Liao-tung Peninsula on the conclusion of the Chino-Japanese war of 1894-5,<sup>1</sup> were again manifested throughout the six months preceding the declaration of war against Russia, during which Japan sought by negotiation, but sought in vain, for a peaceful solution of this vital question. Thus every seaman in the Japanese navy, every soldier in the army knew when the first blow was struck at Russia, that by no other course was it possible to safeguard the honour and political freedom of his country, and that upon the issue of the struggle depended the whole future of his nation. It was this knowledge, coupled with an unexampled high conception of the obligations of the individual to the community, that inspired the personnel of the Japanese army and navy with a spirit of self-sacrifice unsurpassed in the annals of war.

On the Russian side the moral motive power was

<sup>1</sup>The subsequent occupation of Port Arthur by Russia accentuated the bitterness of this humiliation. A Japanese poet wrote as to this: "The spirits of our dead can never sleep under the Russian flag."

not so strong. The Russian policy in the Far East, although for many years steadily pursued, was the outcome rather of diplomatic ambitions than of national necessities. Moreover, the current of national impulse was checked in Russia by her undemocratic form of government, and seemed at the moment to be gathering strength to break down that dam, before its full force could be felt in any external channel. Neither army nor navy were therefore inspired by national enthusiasm for the contest with Japan. Both services were moreover seriously handicapped by defective administration and training. Yet in both the traditional devotion to the Czar and the dogged courage which characterize the Russian soldier and sailor in war were weighty enough to ensure that the balance of moral superiority in favour of Japan would be insufficient to secure victory unless supplemented by other advantages.

Materially the issue of the problem will be found, on careful examination, to hang on even scales. In Japan the main object of the war was the substitution of Japanese for Russian control in Southern Manchuria, and the prevention of any further advance by Russia in the direction of Korea.<sup>1</sup> Japan being separated by the sea from the main continent of Asia, it followed that if the Japanese fleet could have been defeated, Japan would have failed to attain either of these objects.<sup>2</sup> The great importance of sea com-

<sup>1</sup> v. p. 392, vol. i. *Official (Naval and Military) History of the Russo-Japanese War.*

<sup>2</sup> v. p. 46, *Ibid.*

mand in the struggle had therefore been long foreseen. Yet though Japan had strained every nerve to build up an adequate fleet, the Japanese navy was at the outset on paper slightly inferior in strength to the Russian fleet in Far Eastern waters, an inferiority emphasized by the lack of any reserve of armoured vessels, and of any dockyard in which such vessels could be built.<sup>1</sup> For land operations the total number of trained men in the Czar's dominions at the outset of the war exceeded four and a half millions, while Japan had trained but 850,000 for operations in the field. Russia possessed twenty-nine army corps, besides a number of independent cavalry divisions, rifle brigades, and other troops not included in the army corps organization. Japan had but thirteen divisions, and thirteen Kobi (reservists) brigades, besides two cavalry brigades and two artillery brigades. This startling predominance in numerical strength was, however, markedly curtailed by strategic conditions. Given the attainment of sea command by Japan, the Japanese army "could reach the field of operations in force superior to the Russian troops already there, and could, it was hoped, be maintained in greater numbers than those which the Trans-Siberian railway could convey."<sup>2</sup> This hope was, however, to be falsified. The Japanese General Staff, in spite of all their care, underestimated the enemy's power of despatching reinforcements to the seat of

<sup>1</sup> v. p. 41, vol. i. *Official (Naval and Military) History of the Russo-Japanese War.*

<sup>2</sup> v. p. 46, *Ibid.*

war, and thus, notwithstanding an augmentation of her army by five divisions during the war, in the two crucial battles of Liao-yang and Mukden, Japan's destinies depended on a force in numerical inferiority.

Furthermore, in wealth and material resources Russia entered on the struggle with advantages which might have substantially influenced the final issue, had not unbroken success maintained and strengthened Japan's financial credit in the markets of the world.

If then the superiority of Japan in moral qualities was not sufficient of itself to ensure victory, while both in naval and military strength, and in material and financial resources she was weaker than her adversary, to what cause must be attributed her attainments of the objects to secure which she threw down the gauntlet with such odds apparently against her? The secret of her success lay in skill in accumulating and applying the power produced by the combination of the highest moral qualities with sound organization and thorough war preparation. To appreciate this skill we must not be content merely to note the scientific audacity of those offensive tactics which the commanders of the Japanese armies consistently exhibited on the battlefield, nor may we rest satisfied with contemplating the almost perfect co-operation of navy and army in one great strategic plan, or the stern resolution with which that plan was pursued, ruthless of the sacrifices it entailed. Admirable tactical leading and sound strategy stand out indeed prominently in the great campaign which culminated in the capture of Port Arthur and the

victories of Tsushima and Mukden, but the seed from which those victories sprung was sown during the years of strenuous national preparation and organization that preceded the war. During all that period of humiliation and anxiety the way to victory was prepared by the foresight which made diplomacy keep exact step with war preparation, forged a national army and navy into tempered weapons, fit for the execution of the national purpose, and built up a General Staff capable of so handling those weapons as to ensure the delivery of a series of perfectly-timed blows.

Fortunately too for Japan the unity of action displayed by her statesmen, administrators and naval and military commanders, was altogether lacking in the war preparations and war control of the naval and military forces of Russia. Over confident in her superior strength the latter allowed her diplomacy to outrun her war preparation. The struggle thus commenced with the surprise of the main Russian fleet at Port Arthur by a torpedo attack, and the loss of the two cruisers detached for political purposes to Chemulpo. These initial disasters were, it is true, retrievable. More than once later, the Port Arthur fleet was in a position to fight on even terms with its enemy for the supreme stake of sea command. But the misfortune of Admiral Makarov's loss in the *Petropavlovsk*, and the incompetency of his successors in command allowed those opportunities to slip by, and thus a fleet by which the determining factor of the campaign—naval supremacy—might at the outset

have been wrested, perished miserably in harbour under the howitzer fire of the besieging army.

So too the Russian land forces failed, not perhaps so piteously as the navy, but the failure involved the surrender of all Russia's ambitions in the Far East, and terminated the war. And this failure again must be attributed to incompetent direction, to lack of skill in leadership. For Kuropatkin during the first phase of the campaign faced by an enemy superior in strength and mobility, tied to a single railway line and dependent on it for reinforcements in personnel and material, responsible for the army, and yet held in leading-strings by the Viceroy and the St. Petersburg War Office, every allowance must be made. But at Liao-yang, on the Sha-Ho and at Mukden it was not inferiority in numbers nor interference by higher authority which ruined the Russian commander. His failure was the result of his own tactical incapacity, of the fatal cult of positions, of the moral weakness which hedged against defeat by detaining large reserves as passive onlookers of the fight, and thus missed victory.

The primary causes of this dual failure by sea and land were undoubtedly national moral weakness and national disorganization.

The history of the latest modern campaign, the Balkan war 1912-13, has yet to be written. At present, indeed, little or no information as to its details has become available to the ordinary student of strategy and tactics. Yet enough is known to make it clear that the defeat of Turkey was due to defects in national organization, national morale,

and national preparation for war. The Allies, on the other hand, have presented to the world a striking example of the capacity of even small communities for securing religious and political freedom, when inspired by the spirit of determination and self-sacrifice. It may be said of them—to quote from a recent article in the *Army Review*—that :

*“ They concerted a working scheme, which gave them the strategic advantage.*

*They effected their plans in secret, and carried them out with vigour and celerity, leaving their enemy no time in which to make good his deficiencies and disabilities.*

*They proved the value of peace organization to meet the exigencies of war, and of its effect on mobilization and rapid concentration.*

*They showed themselves possessed of abiding power, virility and courage ; of a capacity to endure both losses and the hardships incidental to a campaign in which the question of supplies demanded continual effort.*

*They proved once again that a well-prepared foe will leave his adversary no leisure to perfect his arrangements when the decision to proceed to hostilities has once been made.”*<sup>1</sup>

The three principal campaigns of the last half century, the Franco-German, the Russo-Japanese and the Balkan all therefore teach the same lesson, that preparation for war is a national duty, the neglect of which involves humiliation and disaster.

The essence of the conclusions to be drawn from a

<sup>1</sup> *Army Review*, vol. iv. No. 1, pp. 247-8.



historical examination of the factors of success in modern war is indeed that victory or defeat depends not so much on the size of armies and fleets as on their fighting efficiency, and that this efficiency is directly proportionate to the moral force of the nation and to the extent to which the nation realizes its responsibility, individually and collectively, for its own preservation.

## CHAPTER II.

### THE ORGANIZATION OF A FIELD ARMY.

"The fighting troops of the army are composed of cavalry, artillery, engineers, infantry, mounted infantry, and cyclists. The arms are in certain proportions which have been fixed as a result of experience. Each has its special characteristics and functions, and is dependent on each other."—*Field Service Regulations*, part i. section 2 (1).

A MODERN army may be compared as regards its fighting organization to a great machine, the design and adjustments of which have been gradually evolved and perfected by scientific study and prolonged experience. Prior to the Napoleonic epoch no higher unit than the regiment existed permanently in the small professional armies of Europe. In the field an experimental higher organization, somewhat resembling divisions, had been attempted by Turenne in the seventeenth century and by Marshal Broglie and Duke Ferdinand in the eighteenth, but as a rule the old method of dividing an army into wings or into first and second lines and treating each arm as a separate command was adhered to until the introduction by the French Republic in its newly-formed national army of a definite divisional organization, comprising four demi-brigades of infantry (each of

three battalions), four to eight squadrons of cavalry, and one or two companies of artillery (eight to twelve guns). This new system proved so successful as to be accepted after a brief interval by the armies of other States, including that of Great Britain.

Napoleon further enunciated that "no man can command more than five distinct bodies in the same theatre of war,"<sup>1</sup> and in pursuance of this principle evolved the army corps unit. The Napoleonic Army Corps was however not planned on any definite model, but even in the same army varied greatly both in strength and composition. Thus the French army concentrated for the 1807 campaign comprised seven corps of the line and the Guards corps. Of the former, Soult's, the strongest, included 30,190 infantry and 1366 cavalry, while Mortier's, the weakest, had but 14,000 infantry and 1000 cavalry. The Guards were still weaker in infantry, having but 7319 men of that arm, although the cavalry contingent was 1808. Moreover none of these organizations were permanent, nor, though at times composed mainly of troops drawn from one in particular of Napoleon's many subject States, had they any real territorial affinity. To the General Staff of Prussia belongs the credit of evolving during the nineteenth century the modern system of fixing exact establishments for army corps and divisions, with a well balanced proportion of the various arms, of maintaining them as permanent peace organization, and of allotting to each army corps a territorial area, in which it is quartered

<sup>1</sup> v. p. 6, Home's *Précis of Minor Tactics*, 1st edition.

in peace and from which both in peace and on mobilization it draws its men, animals and equipment.

The soundness of this system has become a commonplace in military organization. Every modern war emphasizes the fact that regiments, battalions and batteries can never be moulded into such a cast-iron uniformity of pattern as to be exchangeable haphazard from one higher unit to another, or capable of being grouped together at a moment's notice into a new higher unit without distinct and substantial loss of efficiency. Even the most perfectly constructed mechanical machinery cannot at first start do its best work. Its maximum of power is not attained until the component parts have had time to settle down, to get used to each other mechanically, to wear away their mutual friction. But if this be true of mechanical machines, it is ten times more true of great human fighting machines, such as brigades and divisions, whose efficiency and force are dependent on that spirit of self-sacrifice and comradeship, which joint service and joint training alone engender.

In the South African war, as we have already seen, the British army in this matter fought under a disadvantage. A definite war organization had, it is true, been approved by Mr. Stanhope's memorandum of 8th December, 1888, and was gradually developed in the subsequent eleven years, but it was an organization which only came into existence on mobilization. Moreover the value of permanent higher organization was ignored or but imperfectly recognized, not only in the system existing before the war for the

peace command of troops, but also in the conduct of the campaign itself. The force of circumstances, no doubt, strangled the First Army Corps before birth and hopelessly intermingled its divisions and brigades. Yet when the strain of the first phase of the campaign ended, there lingered still an indifference to the maintenance intact of higher organizations, a whittling away of divisions, brigades, and columns piecemeal without any attempt to reform them, when opportunity offered, a perpetual creation of new divisions, new brigades and new columns, composed of units unknown to each other and united for a brief time under new commanders and new staff to be again a little later broken up and re-cast in fresh formations. These kaleidoscopic changes may be in part accounted for by the peculiar circumstances of the campaign and of the theatre of war; but that there was some failure to appreciate the loss of efficiency, entailed by the perpetual dislocation of higher commands, it is difficult wholly to deny.<sup>1</sup>

A like defect is very noticeable in the higher direction of the Russian troops in Manchuria in the 1904-1905 campaign. "The confusion of units and the breaking up of commands"—we are told by the Committee of Imperial Defence<sup>2</sup>—"caused serious misgivings in the minds of the Russian officers and

<sup>1</sup> Our *F.S. Regulations*, part i. section 23 (3), now direct very definitely that in the distribution of a force into columns its organization "must be considered, so that divisions and brigades are not broken up, except when this is absolutely unavoidable."

<sup>2</sup> v. *Official History (Naval and Military) Russo-Japanese War*, vol. i. p. 237.

unnecessary fatigue to the men." And this breaking up of commands is observable not only in the hasty strategic distribution of reinforcements, as they arrived in the theatre of war during the earlier part of the campaign, when haste was excusable, but became a constant characteristic of Kuropatkin's method of battle command. In the Sha-Ho struggle Bilderling—practically an army commander—never knew from day to day how far the corps assigned to him were free to obey his orders, and Mau, a divisional general, set adrift at the outset with a brigade, became the shuttlecock of the battlefield, being four times in ten days pushed by headquarters from one corps command to another.

Very different was the handling of the Japanese troops. So long as ever circumstances permitted, Oyama and his Staff scrupulously respected the original organization of the armies, divisions and brigades. When stress of battle or some sudden emergency necessitated detachments, the original organization was restored on the earliest possible opportunity. Thus towards the end of the battle of the Sha-Ho, two whole days (the 15th and 16th October) were devoted to re-establishing the organization of the Japanese armies, and to replacing in their original commands detached brigades and divisions, and this although the process involved much counter-marching in the face of an active enemy, and—a still more serious matter—the temporary abandonment of that initiative, to attain which the Japanese Staff had made such great sacrifices, and which they still hoped almost imme-

diately to resume for a further advance to the Hun-Ho.<sup>1</sup>

The experiences indeed of that great battle must have confirmed in the mind of the Japanese Staff that belief in the value of organization, which they had acquired from the master model of Germany. The readjustment of the IV. Army on the afternoon of the 11th October and the assignment to its commander, for the purpose of the great night attack on San-kuai-shih-shan, not only of two great fresh Kobi brigades and a regiment of artillery from the General Reserve to take the place of the 5th Division—but also of a portion of the 2nd Division from Kuroki's command,<sup>2</sup> did not in fact prove a complete success. Similarly, too, the plan, drafted apparently by Kuroki and approved by Japanese Headquarters on the afternoon of the 12th October, of organizing a special column of three brigades, withdrawn respectively from the Guards, 2nd, and 12th Divisions, to cut off Stackelberg's line of retreat<sup>3</sup> was subsequently abandoned, and was whittled down to Matsunaga's isolated and unsuccessful attack, with a single brigade, on Chao-hsien-ling.<sup>4</sup>

<sup>1</sup> v. Oyama's orders for 15th October, 1904. *Official History*, part v. p. 147.

<sup>2</sup> v. Para. 4 of Oyama's orders for 12th October. *Official History* part v. p. 62. It is noticeable too that at Liao-yang on the 31st August the Guards and 6th Division did nothing all day, Nodzu, the commander of the IV. Army, hesitating to give orders to the Guards, although placed at his disposal. v. *Official History*, part iv. p. 72.

<sup>3</sup> v. Paragraphs 1, 2, 3, Oyama's orders for 13th October. *Official History*, part v. p. 106.

<sup>4</sup> *Official History*, part v. p. 110.

The Manchurian campaign therefore confirms the lessons of the value of permanent war organization stamped so plainly on the pages of history of the South African war, and should increase our thankfulness that those lessons were acted on by the British authorities without waiting for such confirmation. Probably that reform would have been carried out many years before the war, but for the special difficulties involved by our system of voluntary recruitment, and our over-sea garrison duties. It was not easy at first to overcome these difficulties, and thus, though a scheme for giving on mobilization to the troops serving at home a war organization of divisions and army corps had been approved so long ago as 1871, and worked out with satisfactory completeness by the Mobilization branch at the War Office during the subsequent years prior to the South African war, yet permanent peace organization, higher than the regimental unit, continued to be lacking, with the exception only of three infantry brigades stationed at Aldershot. But even before the conclusion of hostilities in South Africa, a tentative plan for the permanent organization of six army corps from the regular and auxiliary troops normally quartered in peace time in the United Kingdom was formulated by the War Office and approved by Parliament. Subsequently, however, it was held that the army corps system is not altogether suitable to the British forces, having regard to their strength, liabilities and normal strategic distribution. In conformity therefore with further Parliamentary sanction the regular field troops



stationed in the United Kingdom are now permanently organized in four cavalry brigades and six Divisions, the Territorial army, created by the amalgamation of the old Yeomanry and Volunteer forces, furnishing in addition, but for home defence only, fourteen mounted Brigades and fourteen Divisions. A seventh regular division could be organized on mobilization from the troops normally stationed in South Africa, Egypt and the Mediterranean. In India, the army, Native and British, is organized in nine divisions, besides garrisons and line of communication troops. In the near future it is to be hoped that the land forces maintained by the over-sea Dominions will be moulded into divisional organization of the same pattern in conformity with the recommendations of the chief of the Imperial General Staff and the Committee of Imperial Defence. On mobilization these various divisions, both at home and abroad, would be grouped in conformity with strategic requirements into armies on the pattern of the Japanese system.

The relative proportion of the various arms of the service varied considerably during the last century. In Marlborough's days cavalry were to infantry as 1 to 2.<sup>1</sup> Napoleon laid down that "If the infantry of an army be represented by unity, the cavalry should be  $\frac{1}{4}$ , the artillery  $\frac{1}{8}$ , the engineers  $\frac{1}{10}$ , the train  $\frac{1}{30}$ ; but, if the country be mountainous, cavalry need only be  $\frac{1}{5}$ ."

It is instructive to compare this assessment with

<sup>1</sup> Curiously enough, a similar position is to be noted in the expeditionary force organised by Julius Caesar for his second invasion of Britain. *v. Political History of England*, vol. i. p. 16.

the composition of the field troops at the disposal of Japan at the outbreak of the Manchurian campaign, and of the Russian field troops then available locally.<sup>1</sup>

	Japanese.	Approximate Proportion to Infantry.	Russian.	Approximate Proportion to Infantry.
Rifles - - -	257,700	1	70,000	1
Sabres - - -	13,130	$\frac{1}{20}$	4,200	$\frac{1}{17}$
Guns (allowing 30 officers and men per gun) -	870	$\frac{1}{10}$	196	$\frac{1}{12}$
Engineers - -	13,430	$\frac{1}{19}$	2,700	$\frac{1}{26}$

After the commencement of a campaign the actual fighting strength of an army at a particular battle is not always ascertainable, but the following comparison of the units engaged on the three principal land fights of the Russo-Japanese war approximately illustrates the proportion of the three arms under modern conditions:

SHA-HO.<sup>2</sup>

	Battalions.	Squadrons.	Guns.	Remarks.
Japanese -	164 or 170	50	574	The units are stated to have been up to establishment. If so, the guns were less than 4 per 1000 rifles.
Russians -	257 $\frac{1}{2}$	143	760	Average strength of battalions 670 approximately. The proportion of guns to rifles was therefore 4.5 per 1000.

<sup>1</sup> *v. Official History of the Russo-Japanese War*, vol. i. pp. 19, 232.

<sup>2</sup> *The Battle on the Sha-Ho*, authorized translation by Karl von Donat, from the *Militär Wochenblatt*, August, 1906, p. 18.

## LIAO-YANG.<sup>1</sup>

	Battalions.	Squadrons.	Guns.	Remarks.
Japanese -	113	33	470	Actual strength of units not stated.
Russians -	193½	154½	613	

## MUKDEN.<sup>2</sup>

Japanese -	263	66	1070	Strength of battalions about 160 over establishment; the proportion of guns therefore was approximately 3·56 per 1000 rifles, cavalry to infantry as 1 : 24.
Russians -	370	142	1200	Aggregate numerical strength of infantry estimated at 292,500; guns therefore approximately 4·1 per 1000 rifles. Proportion of cavalry to infantry as 1 : 18.

The latest great war showed, therefore, as compared with the Napoleonic ideal, a great decrease in the proportionate strength of cavalry, but no change in the proportion of artillery to infantry. Nevertheless at the time of and immediately after the Franco-German war, the latter proportion had sunk below the Napoleonic standard. The German Army Corps establishment of 1873 allowed but 90 guns to 24,633 rifles or 84 guns, excluding the Horse Artillery

<sup>1</sup> *v. Official History of the Russo-Japanese War*, part iv. p. 12.

<sup>2</sup> *The Battle of Mukden*, a supplement to *Militär Wochenblatt*, authorized translation by Karl von Donat, pp. 9-10.

battery of the Cavalry Division allotted at that time to an Army Corps. The actual proportion therefore was 3.5 guns per 1000 rifles. The establishment of the French Army Corps of the 1870 war and that approved by the British War Office in 1871 show approximately the same relative proportion.

The experiences of the 1904-5 struggle have led to a further increase of the proportion of guns to rifles. Thus the present German Division, which now includes guns previously classified as corps or reserve artillery, has an establishment of twelve batteries, or six guns per 1000 rifles. The British Divisional establishment contains thirteen batteries (nine field, three Howitzer, and one four-gunned heavy), the proportion of guns to rifles being thus slightly greater than that of the German Division.

The growth in strength of the division in the British service since the first tentative official approval<sup>1</sup> of a divisional war establishment forty years ago is very notable, and may best be illustrated by a comparison of that shown below with *War Establishments*, issued with Army Orders of February 1, 1912, Section 8 (Table B.).

Contrasting the former with our present division the following changes are specially noticeable :

- (a) The total strength of the division has more than doubled.
- (b) The number of guns has quadrupled, *i.e.* from eighteen to seventy-six, the latter figure

<sup>1</sup> This approval was not, however, ratified by the Secretary of State for War until 1888, seventeen years later.

## A DIVISION OF INFANTRY.

(APPROVED BY H.R.H. THE COMMANDER-IN-CHIEF. 18.7.71.)

Units.	Officers	Other ranks.	Total all ranks.	Horses.	Guns.	Remarks.
Staff - - -	13	6	19	36		
Two Brigades Infantry (six battalions) - -	194	6398	6592	82	—	
One Battalion Rifles - -	31	1066	1097	10	—	
One Regiment Cavalry - -	27	607	634	559	—	
Three Batteries Field Artillery	21	547	568	436	18	{ One 9-pounder battery. Two 16-pounder batteries.
One Coy. Royal Engineers -	5	186	191	41	—	
One Troop Military Police -	2	73	75	65	—	
Ammunition Column - -	6	206	212	253	—	
Totals -	299	9089	9388	1482	18	

including eighteen 4.5 inch howitzers and four 60-pounders.

- (c) Two companies of mounted infantry replace the old regiment of divisional cavalry.
- (d) The divisional Royal Engineers have been increased by a Signal Company and a 2nd Field Company.
- (e) The supply, transport, and medical services, no details for which were given in the 1871 divisional establishment, are now adequately

provided for by the organization of a divisional train, and three field ambulances.

But in addition to the divisional organization there are certain units, such as wireless, cable, and air-line signal companies and bridging train, nominally allotted as army troops, and placed under the direct orders of the army commander. Other units, such as siege artillery and fortress companies R.E., are also similarly allotted when special circumstances require.

Four recent developments in the war organization of the British Army are of special strategical and tactical interest. The first is to be found in the division of the mounted troops into three distinct bodies, viz. those assigned for (1) divisional duties, (2) general protective duties, and (3) special missions. (*Field Service Regulations*, part i. section 65.)

Divisional duties are under the present organization of our expeditionary force assigned to two mounted infantry companies attached to each division.<sup>2</sup> They consist mainly of assisting the infantry in the immediate protection of the division, whether halted or on the line of march, of maintaining connection with the protective mounted troops, the general advanced guards, and neighbouring columns, and of facilitating intercommunication generally.<sup>1</sup>

For the purpose of general protection mounted brigades will be organized on mobilization, composed of one or two cavalry regiments, two or one M.I. regiments,<sup>2</sup> one H.A. battery, a signal troop, a field

<sup>1</sup> *Cavalry Training*, 1912, section 173.

<sup>2</sup> Since the above was written, it has been decided to remove all M.I. from the Expeditionary Force, replacing it with other units.

ambulance, and a brigade train.<sup>1</sup> The main duties of these brigades are to secure tactical liberty of action for the force they are covering by keeping the enemy at a distance, and to supply to the commanders of the force timely information concerning the enemy's movements or positions, and concerning the tactical features, communications, and resources of the country in front of the main body.<sup>2</sup>

Special missions are allotted to the independent cavalry by the direct orders of the Commander-in-Chief. As a rule the main object to be attained is information as to the strength, movements, and dispositions of the main force of the enemy, but besides such strategic reconnaissance other special tasks may be assigned, "such as intercepting the enemy's movements, reaching his communications, seizing important points, or operating so as to deceive and delay the enemy."<sup>3</sup> In the British service *War Establishments* at present provide for these duties a cavalry division, composed of four cavalry brigades and divisional troops. It has been suggested, however, that four brigades are a somewhat large mounted force to be handled as one unit, and it would seem not impossible that our present single cavalry division may ultimately be developed into two divisions, each of somewhat lesser strength. In any case it is prescribed in the latest revision of the *Field Service*

<sup>1</sup> *War Establishments*, 1913, p. 14. The return however of cavalry regiments from South Africa would seem likely to increase the proportion of cavalry in these brigades.

<sup>2</sup> *Cavalry Training*, 1912, section 172.

<sup>3</sup> *Ibid.* section 171 (5).

*Regulations* as "the principle governing the distribution of mounted troops" that "the Commander-in-Chief must group his units according to requirements, varying the grouping from time to time as the situation may require."<sup>1</sup>

The second development in war organization is the marked increase in an army's means of intercommunication, a development which in a measure restores to the supreme commander the continued control over his forces in action, of which modern fighting conditions seemed likely at one time to deprive him. The details of this will be found discussed in a later chapter.

The third recent development in organization—the adaptation of mechanical transport to military purposes, and the consequent reorganization of the whole system of replenishment of the Field Army's rations, forage, and ammunition—represents not merely an administrative gain, nor merely an instance of how inventions and improvements made primarily to forward commercial purposes and peaceful pursuits, are inevitably annexed by the service of war, but constitute a new departure, carrying with it important strategical and even tactical consequences.

The principles on which this reorganization has been effected are set forth very clearly in the explanatory memorandum issued with army orders of 1st February, 1912. Its details should be studied in *War Establishments*, part i. 1913. The first and most important point to note is that the mobility of the Field Army has been increased by a substantial reduction in the

<sup>1</sup> *Field Service Regulations*, 1912, section 65 (3).



great number of vehicles, which formerly encumbered its columns, and yet the actual number of days' subsistence immediately available for troops entering on the prolonged struggle of a modern battle has practically been increased.

The supply transport of the Field Army or armies is now limited to the cook-wagons of 1st Line Transport and the supply wagons of the train, both of these consisting of horsed vehicles. The train will be filled up daily direct from rail-head by supply columns, equipped with twenty-seven three-ton lorries for supply purposes and one for postal service, besides three for first-aid repairs, and seven for reliefs.<sup>1</sup> These lorries have a speed of twelve miles an hour. Their maximum range from rail-head has been fixed at forty miles. They can easily therefore run out, fill up the divisional train supply wagons, and return to rail-head in a period of some ten hours. The first objective on the outward journey will be a rendezvous, fixed for each column over night by Army Headquarters and communicated to the officer commanding the supply column through the Inspector-General of Communications. At the rendezvous, which would be as a rule some miles in rear of the bivouacs or billeting areas of the divisions, the column will be met by a divisional staff-officer of the Q.M.G.'s department and will be guided by him to the refilling points, where the supply wagons of the train will await him. These refilling points will generally be selected immediately in front

<sup>1</sup> Cavalry and Army Troops Supply Columns have each a different establishment.

of the bivouacs or billeting areas, the arrival there of the M.T. lorries being usually arranged to take place as soon as the troops have vacated those areas for their forward march. The official memorandum suggests nine or ten a.m. as the normal hour for refilling, but this suggestion assumes an early start for the division. If the division is halted for the day, refilling points will be selected within the brigade billeting areas or bivouacs, the horses of the train thus being ensured their day's rest. In either case the lorries will be utilised to take back sick and wounded, and should reach rail-head again before dark. There they will reload over-night and make ready to start again in the early morning of the following day.

This system will admit of the Divisional Commander being assured in the forenoon of each day of having under his control four days' rations for every man, viz. :

- 1 emergency ration on the soldier.
- 1 reserve ration on the soldier.
- 1 day's ration in the cook's wagon.
- 1 day's ration in the supply train wagons.

Under the system now superseded, it is true, Divisional Commanders had five and a half days' rations, viz.:

- 1 emergency ration.
- $\frac{1}{2}$  ration (the unconsumed portion of the previous day's) on soldier.
- 1 day's ration, Divisional Supply Column.
- 3 days' rations, Divisional Supply Park.

But with the exception of the food carried by the soldier, all these were situated at a distance in rear of the column, and could not readily be brought up for use in a prolonged battle. Moreover the old system involved the inclusion of an immense number of drivers and vehicles for supply purposes in the war establishment of a division. It provided only iron rations, while the new M.T. transport system will, it is hoped, enable troops in the field to be, as a rule, supplied daily with fresh meat and baked bread, brought direct from rail-head.

We have seen that the establishment of each supply column on the new system makes generous provision for breakdowns on the road. Three lorries are allotted for first-aid repairs, seven (*i.e.* twenty-five per cent.) are maintained for relief purposes, and three tractors enable a workshop to be established at rail-head. To secure the full use of these workshops, it is desirable that rail-head should not be pushed forward more than once in every two days.

It is conceivable of course that by the act of the enemy or some exceptional mishap the M.T. transport might become non-effective. To meet this possibility, six Reserve Parks (horsed) will be maintained on the lines of communication, the normal contents of each Park being two days' Reserve iron rations and two days' grain, calculated on a divisional basis, with a proportional addition for the Cavalry Division and mounted troops.

Similarly too, the relegation to the new Ammunition Parks (Mechanical Transport) of about one-third

of the gun ammunition and one-fourth of the rifle ammunition formerly carried in the horsed vehicles of the Field Army,<sup>1</sup> has substantially lessened the length of the marching columns, while facilitating the replenishment of the ammunition columns, when emptied by battle demands. The old Divisional Ammunition Column and horsed Ammunition Parks were so lengthy as to be a care and an encumbrance to the commander of troops both on the march and in action. During the approach 'marches the new Ammunition Parks will remain near rail-head, but when fighting commences a two or three hours' run will bring them within easy distance of the Ammunition Column. Yet the Parks as a whole will still be held back sufficiently far behind the fighting troops to ensure that the freedom of movement of the latter is not curtailed, sections or smaller portions of the Parks being sent forward to replenish the Ammunition Column as required.

The mobility of a Field Army will moreover be further enhanced by the use of the Mechanical Transport of the supply columns and Ammunition Parks for the transport of the sick and wounded to rail-head. Under the old system of horsed vehicles the evacuation after an action of the field ambulances was a slow and tedious process involving much suffering to the patients. Under the new it will be swiftly and smoothly effected by utilizing the empty lorries

<sup>1</sup> For details compare pp. 6-7 *War Establishments*, 1910-1911, with the same pages *War Establishments*, 1913; see also p. 5 *et seq.* of explanatory memorandum.—Army Orders of 1st February, 1912.

returning to rail-head. It is true it has been objected that the transport of wounded and sick men in lorries to be used again a few hours later for carrying bread and meat is contrary to sanitary principles and involves risk of disease. This objection does not, however, apply at all to the use of the Ammunition Park lorries, whose number—seventy in each Park—greatly exceeds the number of the supply columns lorries. Moreover, the proportion of bullet wounds which result in any serious bleeding is but small in modern war against an enemy armed with the small-bore rifle. It will therefore be a comparatively simple matter to arrange that the supply lorries should carry only the cases which will not involve sanitary risks. It is, however, perhaps an open question whether the Clearing Hospitals, whose personnel is responsible for this transfer of the wounded, might not with advantage be given some permanent transport of its own.

A point to which careful attention will be needed is the protection of line of communications from rail-head to the various rendezvous. It is evident that the mobility of the Field Army would be momentarily arrested and permanently impaired to a serious degree by the destruction of the mechanical transport of its supply columns, and that the lorries, while on the road from rail-head, will offer a tempting objective for cavalry raids. The protection of the roads leading from rail-head to the rendezvous, during the hours of their use by mechanical transport, will therefore demand special attention, and probably the allotment

of mobile troops for that purpose will become a necessity.

The fourth and last recent development in war organization—the formation of flying squadrons—is probably the most notable addition to an army in the field made since the introduction of gunpowder. The Flying Corps is, however, too important a unit to be discussed in any detail under the heading of organization. Its consideration will therefore be deferred to another chapter.

## CHAPTER III.

### THE CHARACTERISTICS OF THE FIGHTING TROOPS

#### CAVALRY AND OTHER MOUNTED TROOPS.

"Without mounted troops the other arms are hampered by ignorance of the enemy's movements, cannot move in security, and are unable to reap effectively the fruits of victory."—*Field Service Regulations*, part i. section 2 (2).

"Ability to move rapidly, and to cover long distances in a comparatively short time, gives cavalry power to obtain information and to combine attack and surprise to the best advantage. The fact that it is armed with a long range rifle has endowed it with great independence, and extended its sphere of action; for cavalry need no longer be stopped by difficulties which can only be overcome by the employment of rifle fire."—*Ibid.* part i. section 3 (1).

THE General Staff justly declare that "it is essential, except perhaps in mountainous and forest country that every force which takes the field against an organized enemy should be composed of all arms." Yet infantry, since the days of Crecy, Agincourt, and Poitiers, has always been the dominant arm, "the queen of the battlefield," and this dominance has increased, and is still increasing under the conditions of modern war, for the supreme consummation of all battle tactics is the infantry assault. However dependent infantry may be upon the other arms for assistance in the difficult and prolonged struggle leading up to the

assault, and however incapable foot-soldiers are of reaping subsequently the full fruits of victory, yet the power of delivering the decisive stroke—the stroke upon which the main issue depends, is vested alone in the infantry arm. Thus not only artillery and engineers, who “are only effective in conjunction with the other arms,” but even the cavalry and other mounted troops are but auxiliary to the infantry’s mission ; the main object of all their efforts must be to assist, either directly or indirectly, the infantry to gain that decisive success which infantry only can secure.

Yet cavalry differs from the other two auxiliary arms, in enjoying great independence of action, an independence which necessitates the allotment to it of a portion of those arms, and at times even as an additional auxiliary, a detachment of infantry, either mounted or dismounted, and which frequently assigns to it a sphere of action remote and tactically disconnected from that of the main army. Nevertheless the most brilliant achievements of mounted troops, while engaged on an independent mission, are useless unless directly or indirectly they lead to the success of the main army, that is, of the infantry, its dominant factor. “The cavalry fight,” Sir John French tells us, “is only a means to an end.”<sup>1</sup>

The assistance due from cavalry is classified in the *Field Service Regulations* (Section 2 (2)) under three main heads :

(a) Information “of the enemy’s movements.”

<sup>1</sup> v. Preface to General von Bernhardt’s *Cavalry in Future Wars*, p. 26.



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(To this may be added, information of the enemy's dispositions, strength and designs, and information as to the topography of the country and its supplies.)

(b) Protection from surprise, ensuring rest in bivouac and security on the line of march.

(c) Pursuit of the enemy when defeated.

In all these missions the real power of cavalry lies in its superior mobility—superior that is, in relation generally to the other arms. Thus it has been truly said that the principal weapon of the cavalry soldier is his horse. But in addition to the duties specified by the General Staff in these three groups, there are of course other modes in which the mounted troops can aid the army or armies to which they belong, such as the dislocation of the enemy's lines of communication by the means of raids, the detention of his reinforcements and supplies, the seizure of advanced positions or the covering of the retirement of the army after defeat.

It is notable that in the official definition of the principal cavalry duties there is a marked divergence from that given later as to the artillery arm's obligations. In the latter, support of the other arms in battle is the essential feature, but in the assessment of the chief rôle of cavalry there is no mention of actual tactical aid until victory has been won. This omission must not be interpreted to imply any such dogma as that cavalry either are unable or are forbidden to take any part in the main tactical issue; yet it may undoubtedly be attributed to a deduction from the

experiences of modern warfare that the cavalry arm can no longer, under normal conditions, play a dominant part in the main battle.

Since the days when Seydlitz's cavalry, as at Rossbach (5th November, 1757), rode down the Franco-Austrian infantry, there has in fact been—to use the words of the most eminent German writer on cavalry—a “drastic revolution” in all the conditions of war, and new factors have appeared which materially limit the tactical importance of cavalry.<sup>1</sup> Yet for more than a hundred years later than Seydlitz in continental armies the main body of the cavalry was held back to form the reserve cavalry of the attack, and only the light cavalry was sent forward to carry out protective and strategic duties.<sup>2</sup> Thus at Austerlitz (30th November, 1805) the free use of large masses of cavalry on the battlefield was very notable on both sides—especially Kellerman's attack from the French left on the Russian Imperial Guard; Lichtenstein's counter-charge of Austrian cuirassiers, penetrating into the gap between Lannes' and Bernadotte's army corps, but finally checked and driven back by Murat; Lichtenstein's subsequent movement to the centre of the fight and successful attack on the flank of Vandamme's infantry division, and his final overthrow by Napoleon's Household Cavalry, launched by the Emperor's order under Bessières—a

<sup>1</sup> *v. Cavalry in Future Wars*, General von Bernhardt, translated by C. S. Goldman, 1909, pp. 5-11.

<sup>2</sup> *v. Prince Kraft's Letters on Cavalry*, translated by Lt.-Colonel H. Walford, 2nd edition, p. 12.

culminating stroke which proved decisive, the allies falling back closely pressed by Murat's cavalry and Suchet's infantry, with a loss of 30,000 men and 180 guns. Again at the battle of Borodino (7th September, 1812), where the proportion of cavalry in the effective French force present exceeded Napoleon's ideal (30,000 out of a total strength of 133,000), Caulaincourt's division of cuirassiers even achieved the astounding feat of charging in rear and capturing the great Russian redoubt.

Cavalry at this epoch was in fact something more than an auxiliary arm. It was a powerful weapon on the main battlefield, a weapon to be used with care, since, if broken, it could not be replaced, and yet used freely and with full force when occasion required. It was Kellerman's brilliant charge on the flank of the Austrian column advancing to press home victory which, coupled with the opportune advance of Desaix' division, converted a battle lost into a battle won at Marengo (13th June, 1800). It was the repulse of Murat's cavalry (14,000 strong) by the Russian reserve cavalry which deprived Napoleon of success at Eylau (7th February, 1807). It was the failure of Bessières' cavalry to rush the Hungarian infantry squares in his attack on the Austrian centre at Aspern (21st May, 1809) that rendered the issue of that battle so critical for the French. The similar failure of the seventy-seven squadrons launched by Napoleon against the centre of the British position at Waterloo doomed the Emperor to defeat. In writing in after years of this stupendous charge, Wellington attributed his success

to the steadfastness of his infantry. "They were not to be frightened away; in fact we attacked the cuirassiers, who were in possession of our cannon, with squares of infantry, and when once we moved them I poured in our Life Guards." Yet in saying this, the Duke regretted that owing to the then imperfect training of his own cavalry, he could not let them loose until "our admirable infantry had moved the French from the ground."<sup>1</sup>

The French cavalry was at that epoch undoubtedly the finest in Europe. Nevertheless sufficient instances have been quoted to prove that though magnificently led their charges did not always get home on infantry. Quatre Bras, as well as Waterloo, gave proof that the British infantry at least could stand firm before their onslaught. Moreover against other infantry than British there were indications that the potentiality of cavalry on the battlefield had been curtailed since the days when the cumbersome stiffness of infantry movements made its flanks an easy target for the cavalry charge. At Kosnoe a Russian infantry division, but 7000 strong, repulsed forty charges of thirty-five French cavalry regiments. At Aspern 5000 cuirassiers under Murat's leadership stopped, it is true, the Austrian advance, yet failed to break a single battalion, and left 3000 troopers dead on the field. At Wagram the great onslaught of the cuirassiers of the Guard, launched at the critical period of the battle, failed to reach its objective. Macdonald's

<sup>1</sup> *Wellington's Civil Despatches*, vol. iii. p. 353, quoted in Maxwell's *Life of Wellington*, vol. ii. p. 139.

stupendous infantry column, assisted by the fire of a hundred guns, had to do the work of piercing the enemy's centre; the previous attempt of the cavalry had exhausted that arm and left Napoleon powerless to reap the fruits of his victory.

Wagram was not an isolated instance that cavalry used freely on the battlefield cannot be looked to for great exertions afterwards. It was the freshness of Murat's brigades, held in hand during the main battle, that enabled that great leader to carry out his magnificent pursuit after Jena. It was the fresh squadrons of Blücher, not the exhausted English cavalry, that destroyed the beaten French army after Waterloo. The delicacy of a horse's constitution, incapacitating his efficiency after even a short spell of over-exertion, makes it indeed impossible to exact from cavalry units a fulfilment of their strategic duties before the main battle, if they are to be called upon for a supreme effort on the battlefield itself. As to this Prince Kraft remarks:

"In the wars at the beginning of this century" (*i.e.* the nineteenth century) "the great Napoleon did not always make use of his cavalry as did our leaders in the last struggle" (*i.e.* the 1870 campaign), "and in spite of the immense experience of war of the French Grande Armée we find the infantry often marching carelessly at the head of the column. The surprise at Haynau is a good example. Some individuals in our army made sufficient use, during the war of Liberation, of their light cavalry, as is proved by the dispositions made and the deeds done by

Katzler. But the mass of the cavalry was still left in rear."<sup>1</sup>

It is noticeable in connection with these facts that in the Peninsular war British cavalry carried out reconnaissance duties more boldly and efficiently than the French, and that Wellington, while regretting that his cavalry for "want of order" was inferior to the French, when used in brigades, or even in regiments, yet considered "one squadron a match for two French squadrons."<sup>2</sup>

In the Civil war of the United States, 1861-5, both Federals and Confederates showed all the quickness of perception in grappling with new conditions, which characterizes the American mind. There was no longer any question of reserve cavalry, and, although the mounted troops had probably more hard continuous fighting than any other arm, they were neither asked nor expected to dominate the main field of battle. On the other hand, their strategic use to circle round the enemy's army, assess his strength, gain information of his plans, intercept his line of communications, and screen the movements of their own army, was developed in a marked degree. Stuart's raid round the Federal army on the Chickahominy (12th June, 1862) obtained for Lee the exact intelligence as to its dispositions needed to enable him to commence those skilful operations which forced McClellan to evacuate the Peninsula. Again, two months later (23rd August), crossing the Rappa-

<sup>1</sup> v. *Letters on Cavalry*, Walford's translation, p. 12.

<sup>2</sup> *Wellington's Civil Despatches*, vol. iii. p. 353.

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hannock river with 1500 cavalry and encircling the right of Pope (M'Clellan's successor), Stuart attacked the Federal Commander-in-Chief's advanced dépôt at Catlett's station, routed the 2000 troops guarding it, and seized General Pope's despatch book, thus obtaining information as to the strength and disposition of his forces and of the reinforcements expected. This brilliant stroke enabled Lee (during the subsequent week) with still more brilliant daring, so to handle his numerically inferior army as to force his opponent to seek shelter under the guns of Washington with a loss of thirty guns and 20,000 men.<sup>1</sup> In October of the same year, Stuart with but 1800 men, again completely circled the reinstated M'Clellan, hesitating after his success at Sharpsburg on the banks of the Potomac, and thus gained the intelligence—vital to Lee's plans—that no reinforcements had left M'Clellan's army, and that therefore no immediate Federal movement against Richmond was to be apprehended. In this enterprise the Confederate cavalry brigade rode 126 miles in fifty-six hours, and so wore out the Federal horsemen in their efforts to intercept it, that M'Clellan had to stay his advance until fresh remounts were obtained. Yet the drawback to this system of despatching the whole of the cavalry of an army on distant missions was clearly

<sup>1</sup> Prince Kraft (p. 113, *Letters on Cavalry*, Walford's translation, 2nd edition) points out not unfairly that this and similar cavalry "raids" during the American War were carried out under conditions abnormally favourable. Nevertheless they elucidate the development of a capacity of the arm, which to a certain extent was again manifested in both South Africa and Manchuria.

exemplified in this campaign, for the temporary lack of Stuart's brigades, detached on a great raid to the north, much handicapped Lee during the operations which terminated adversely for him at Gettysburg.

*"The eyes of the army were absent. The Confederates stumbled blindly upon their opponents, and the result was that Lee, in place of fighting a defensive battle at Cashtown, where his line of retreat would have been secure, was forced into fighting an offensive battle at Gettysburg about eight miles further east."*<sup>1</sup>

Similarly too the absence of Stoneman's cavalry raiding towards Richmond had been the ruin of the Federal army at Chancellorsville. Yet Lee knew well how to shroud his own movements from the enemy by an impenetrable cavalry screen, and in his preliminary dispositions for the invasion of Maryland (September, 1862) so used Stuart's cavalry as to baffle all the attempts of the Washington government to discover his intentions.<sup>2</sup> Similarly too, Jackson's cavalry, though from lack of discipline they failed him in pursuit after Winchester, did admirable service under Ashby and Mumford in screening his operations during the famous Valley campaign (March-June, 1862) and in concealing his march to Richmond.

Meanwhile in the western theatre of war two other Confederate cavalry officers were month after month displaying the strategic power of the mounted arm, equipped with rifles. Forrest's capture of Murfrees-

<sup>1</sup> *v. The Civil War in the United States*, Wood and Edmunds, p. 223. Stuart indeed rejoined in time to take part in the last of the three days' desperate fighting, but his men and horses were by then completely exhausted.

<sup>2</sup> *Ibid.* p. 120.



borough on the Nashville-Chattanooga railway, in July, 1862, and Morgan's seizure of Gallatin on the Nashville-Louisville railway in the following month, paralysed Buell, the Federal commander, wrested from him the initiative and compelled him to abandon his offensive movement on Chattanooga. Yet to secure such strategic success, the blow must be correctly timed. In December of that year, the Federal army, having accumulated large reserves of supplies at Nashville, its advanced depôt, could afford to disregard a second breaking up of the railway in its rear by Morgan. Nevertheless the same month the destruction by Forrest's 2500 cavalry of the railroad between Jackson and Columbus, which formed Grant's main line of supply, effected, in combination with a raid of 3500 cavalry under Van Dorn round Grant's left flank against his supply depôt at Holly Springs, a complete dislocation of the Federal plans. Grant was compelled to fall back, to lose touch with the enemy, and to abandon his plan of co-operating with Sherman against Vicksburg. Mention too may be made of Sherman's raid against Lee's line of communications in the eastern theatre of war (9-24th May, 1864), and of Wilson's ride (March, 1865) with 14,000 cavalry across Alabama and Georgia, during which he covered 600 miles in thirty days, captured three important cities, two of them strongly garrisoned and entrenched, crossed six large rivers, fought five battles, destroyed railways, factories and iron foundries, and captured 6000 prisoners and 156 guns.<sup>1</sup>

<sup>1</sup> Henderson's *Science of War*, p. 276.

But enough has been said to establish that the capacity of cavalry to accomplish such enterprises under the conditions existing in this campaign was proved up to the hilt. The experiences of the whole war justify in fact the deduction that changes in fighting conditions since the Napoleonic epoch had augmented rather than diminished the strategic importance of mounted troops. Nor had these changes wholly emasculated the arm for tactical employment on the main battlefield. Although there no longer dominant, the combination of fire action with shock action enabled the cavalry on many occasions to play a brilliant rôle.

The *arme blanche* was used freely—notably towards the end of the war, although as early as 23rd May 1862, the dashing charge of 250 Virginian horsemen led by Colonel Flournoy, cut off at Cedarville Kenley's retreat from Front Royal, and enabled Stonewall Jackson to surprise Banks' army and subsequently drive it across the Potomac. "In the Valley of the Shenandoah in 1864" (Lt.-Colonel Henderson records, p. 60, *Science of War*) "the Confederate squadrons were armed only with rifles, while the Federals under Sherman had been taught both to fire and to charge. The result is significant. The Southerners, though admirable horsemen, were worsted at every turn, and their commander had at last to report that his mounted infantry were absolutely useless against the Union cavalry."

Yet the rifle conferred on the cavalry in this war a new power, the power of anticipating the

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enemy in a vital position, and of holding that position until the arrival of reinforcements. Stuart realizing this early in the war had with a single howitzer and a few squadrons dashed at Evelington Heights (3rd July, 1862) and opened fire on M'Clellan's army lying in bivouac at Harrison's landing; but the most striking example of this development of the cavalry rôle is that of the final rounding up of Lee's army, when Sheridan's cavalry, supported by infantry, headed the Confederate Commander-in-Chief three successive times off his line of retreat, first at Five Forks, then at Jettessville, and lastly at Appomattox Station, where the greatest of all the great leaders of men, evolved by that four years' bitter struggle, was compelled to accept the supreme tragedy of surrender.

These lessons of the American war had not however been fully mastered in Europe when, two years after its termination, hostilities broke out between Prussia and the allied armies of Austria and Italy.

*"The idea of a reserve cavalry, which at the decisive moment might be let loose upon the enemy's main strength, was still paramount and kept its force during the war of 1866, in which we find on both sides the same retention of the cavalry masses, which were intended (as it was said) like a torpedo, to strike the final blow at the last moment."*<sup>1</sup>

Nor, although the infantry in this war had rifles in their hands, though not in every case breech-loaders, was the old system altogether lacking in tactical

<sup>1</sup> v. Prince Kraft's *Letters on Cavalry*, p. 12.

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success. At Custozza two Austrian cavalry brigades with an effective strength of about 2400 men rode into Humbert's and Bixio's divisions of infantry, thirty-six battalions in all, and by that one daring charge cowed them into inaction for the rest of the day.<sup>1</sup> In other parts of the same battlefield and again at Königgrätz single squadrons attacked infantry successfully. On the other hand, in Bohemia, although the Austrian cavalry covered with splendid gallantry the retirement of its defeated army and saved it from disaster, yet by strategic inaction it had previously allowed Benedek to be caught and crushed between the converging Prussian forces. Tactically, moreover, the enhanced power of resistance to cavalry conferred on infantry by the improvement in firearms was exemplified by more than one incident.<sup>2</sup> Prince Kraft zu Hohenlohe, himself an artillery officer and therefore an impartial eye-witness, records in fact that in 1866, as well as later in 1870, the Prussian infantry "acquired the conviction that infantry which has no fear of its foe is invincible by cavalry."<sup>3</sup>

In the 1870 campaign this conviction was to be fully justified. In the series of battles, which commencing at Weissenburg, ended with Sedan, there were six attempts to use cavalry divisions against the other two arms. Bonnemain's charge at Elsasshausen, the two attempts to use the 6th Division at Mars-la-Tour (the first between twelve and one p.m. against

<sup>1</sup> v. *Austrian Official Account*, vol. ii. pp. 61-65.

<sup>2</sup> v. Prince Kraft's *Letters on Cavalry*, p. 64.

<sup>3</sup> v. Prince Kraft's 15th *Letter on Infantry*.

Froissard's beaten corps, and the second on the Rezonville plateau after twilight had set in), the advance of the 1st Division across the ravine at Gravelotte, the attempt to push the Division of the Guards up the Illy heights at Sedan, and the magnificent despairing effort of Margueritte's division and a half on the Floing plateau. Every one of these six attempts failed. Two, it is true, Bonnemain's and Margueritte's charges were pushed home, but those two resulted in the annihilation of both divisions under infantry fire. The other four turned back in the face of the certainty of disastrous failure. Four times during the war were brigades of cavalry launched against infantry, Michel's at Morsbronn, and at Mars-la-Tour, on the German side, Redern's and Bredow's, on the French the charge of the 3rd Lancers and the Cuirassiers of the Guard. Of these Bredow's was successful; Redern's had some temporary success while pursuing beaten cavalry, but produced no tactical results. Michel's, and the charge of the Cuirassiers of the Guard at Mars-la-Tour ended in absolute ruin and produced nothing.

Of advances of single regiments against infantry there were three instances in these battles; the attempt of the Brunswick Hussars against the Rotherberg, von Auerswald's charge at Mars-la-Tour to cover the retreat of the 38th Brigade, and the advance of a chasseur regiment against the left wing of the 1st Guards regiment at St. Privat. Of these, von Auerswald alone was successful; that is, like Bredow, he succeeded in gaining a breathing time

for his infantry comrades. Thus of thirteen attempts to use cavalry on the battlefield against infantry two only achieved any real measure of tactical success; one was partially successful, the remainder were all failures, disastrous failures when pushed home.

Bredow's charge was perhaps the most brilliant feat of arms in the war. It was launched under the impression that the French were developing a strong offensive movement against the hardly pressed Prussian guns and infantry, for whom no reinforcements could arrive until another two hours. This impression was however erroneous. The Historical Section of the French General Staff after diligent search have been unable to find any trace of either Canrobert or Marshal Bazaine "having entertained such design at this period of the battle." The idea that the charge itself arrested the advance of the whole French army had in fact already been discountenanced in the German Staff's history of the war,<sup>1</sup> and must now be definitely regarded as a myth. Yet the results obtained fully justified the sacrifice made; the French Staff thus sum them up:

"The heroic charge of the German cavalry achieved therefore in a very real sense the primary object that the Commander of the III. Prussian corps had in mind. The ground traversed by the charge was temporarily abandoned by the greater part of the French infantry occupying it, and the artillery pre-

<sup>1</sup> *v. Franco-German War*—Prussian Staff, Clarke's translation, vol. i. pp. 388 and 389.

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viously deployed on the north of the main road was almost entirely dispersed. Moreover the great battery on the Roman road which since the beginning of the fight had worried the 6th Prussian Division, and had contributed not a little to the repulse of its left wing back to the Trouville copse, was in a state of disorganization, while the German infantry, sorely menaced but a few moments earlier, was now able to gain a little ground on both sides of the main road. Finally the period of calm, which followed the Bredow brigade's vigorous action, raised the morale of the Prussian troops, who recognized that a serious danger had been avoided and a crisis averted, which might have terminated very disadvantageously for them, before the expected reinforcements could arrive."<sup>1</sup>

These results, however, are very different in their scope from those sought by cavalry charges in the days of Seydlitz and Murat, and even their achievement by shock action in the first phases of a fight against superior numbers of all three arms would be infinitely more difficult under present battle conditions than it was forty-three years ago.

But for the limitation of its tactical use on the battlefield during the Franco-German war the cavalry arm received full compensation in the development of its strategic duties and strategic capacity. This development was the more surprising, in that the higher authorities of the German forces apparently entered on the war still obsessed with the old

<sup>1</sup> v. *La Guerre de 1870-1871*, vol. ii. part i. pp. 364-5.

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conception of keeping in hand large cavalry masses, and it was only after the victories of Spicheren and Woerth that the cavalry found the true road to salvation. From that day forward there was neither doubting nor holding back, but a resolute and systematic commitment of the arm to the accomplishment of its strategic work. It was the audacious thrusting forward of a great mass of cavalry across the Moselle at Dieulouard and Pont à Mousson, and its advance northward into the heart of the enemy's country that obtained intelligence which enabled von Moltke to evolve his great scheme for the imprisonment in Metz of Bazaine's army. It was by the daring bivouac of the Prussian cavalry on the night of the 15th August across Bazaine's line of retreat, that the exact position of that army was ascertained. \* Finally—though this was a tactical rather than a strategic influence—it was the presence of seventy-eight squadrons of Prussian cavalry on the 16th August that enabled the weary infantry of the III. Corps to hold up the whole of Bazaine's army until the arrival of reinforcements. Again it was the strategic activity of the German horsemen which discovered the deflection of MacMahon's army northward, and made possible its envelopment and capture at Sedan. Later again, that same arm swung round Paris and for two days formed the western sector of its circle of investment, subsequently covering the investing army for forty miles to the north, west and south. Moreover during all the long marches these brilliant operations entailed on the German forces,



the other arms, thanks to the protective vigilance of the strategic and divisional cavalry, enjoyed the great advantage of undisturbed rest at night,<sup>1</sup> while the French troops, alarmed by the constant clinging of patrols, could obtain but little repose in their bivouacs.

The Russo-Turkish war of 1877 threw but little light on the use of cavalry, save that the best historian of that campaign—Lieutenant Greene, U.S.A.—deduced from its inaction on the battlefield that “the employment of large bodies of cavalry (mounted) on the field of battle belongs to the order of ‘shock’ tactics, whose day is wholly past.”

In South Africa, in the 1899-1902 war, a large portion of the terrain, particularly the rolling downs of the Free State, was unusually favourable to cavalry action. On the other hand, the conditions of the campaign were abnormal, for the British forces had to face an irregularly organized army, composed, save for a few guns, entirely of mounted riflemen, lacking cohesion and discipline. The experiences of that war cannot therefore be accepted as of universal application without considerable reserve. Nevertheless it is dangerous to forget that the rifle in the hands of the mounted burgher proved so formidable, that the British cavalryman was at once forced to discard his own carbine for a rifle, and later gave up altogether the *arme blanche* as adding but useless weight to his

<sup>1</sup> v. Prince Kraft's 5th Letter on Cavalry, especially as to the use of billets by infantry, relying on the trustworthiness of the advanced cavalry.

horse's burden. At the outset of the campaign the training and traditions, as well as the imperfect fire weapon of the British cavalry, hampered its usefulness under such novel conditions. But the adaptability of the arm was soon proved, for that containing or defensive power of the rifle in the hands of the mounted men, upon which the Boers mainly based their own tactics, was fully developed by the cavalry regiments, which, with the assistance of other mounted troops and some infantry, effectively held up a much superior hostile force in the Colesberg area from November, 1899, until Lord Roberts' advance. Similarly too, the use of the mounted arm, aided by Horse Artillery, to head off and detain the enemy by seizing a position commanding his line of march, was admirably exemplified by the weak brigades of cavalry and Royal Horse Artillery which, under General French's leading, arrested Cronje's commandos in the very act of crossing the Modder at Paardeberg, and pinned them down in the river bed until the arrival of the two infantry divisions.<sup>1</sup>

Yet one lesson stands out prominently from that phase of the South African war—the lesson that the economic force of cavalry is limited, and when once expended cannot be restored until after considerable delay. The dash of the British cavalry division to Kimberley—undertaken for political rather than

<sup>1</sup> Compare the action of Sherman's cavalry against Lee's retreating army (p. 69, *supra*) and of the German cavalry facing Bazaine, 16th August, 1870 (p. 74). Given superiority in the mounted arm, it would seem probable that the Japanese could by its use have arrested the Russian retreat after Mukden.

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strategic reasons—so seriously impaired its mobility as to render it incapable of carrying out the enveloping missions assigned to it at Poplar Grove and Driefontein, and necessitated a prolonged halt of the whole army at Bloemfontein. Strategically it is impossible to doubt that the relief of Kimberley might well have been deferred until effected automatically by the action of Lord Roberts' main body against Cronje; such postponement would have ensured a retention of the mounted troops' economic force, which not improbably might have much diminished the duration of the war. Cavalry is too valuable a weapon to keep disused against an emergency, its mobility should be risked freely and boldly when the stakes at issue are adequate, but to expend its efficiency prematurely on an inadequate object entails heavy penalties.

The British advance from Bloemfontein to Pretoria, and thence to the eastern Transvaal frontier, was marked by the combination of infantry frontal demonstrations against the successive positions held by the Boers with a tactical envelopment of the enemy's flanks by mounted troops. But this combination led merely to the enemy's retirement without serious loss. Territory was secured, but not the killing or capture of the enemy. These manœuvres failed therefore to terminate the war and but paved the way to the guerilla resistance, which the Boers maintained after their field army had dissolved.

In that final phase the most notable feature, from a cavalry point of view, was a re-development on both sides of true offensive tactics, and in particular of the

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frequent charges of mounted men across fire-swept zones. The possibility of this had already been established in the cavalry advance for the relief of Kimberley, when Sir John French's Division carried with a two miles' gallop under fire the ridge held by some 800 Boers, barring his march northward from Klip Drift. That the disciplined British mounted troops, although in the last phase armed, cavalry as well as mounted infantry, only with the rifle, should repeat these tactics, was not therefore surprising, but their adoption by the Boers, the tradition of whose mode of fighting was mainly defensive, is strong evidence of the possibility of such methods under certain conditions. Of sixteen instances of the delivery of such charges by mounted Burghers,<sup>1</sup> the most remarkable are the action of Bakenlaagte, Tweebosch, and Roodewal. At Bakenlaagte General Botha, with 1000 men under cover of a mist, rushed the British rearguard, consisting of 380 mounted infantry, one company of infantry and two guns. The charge, however, having ridden over the infantry stopped some thirty yards short of the crest of the British position, the Boers then dismounting and overwhelming the rest of the rearguard by a twenty minutes' fire fight. At Tweebosch De la Rey, charging in three successive lines, overthrew Lord Methuen's column. At Roodewal Kemp, with 1000-1500 men, charged in broad daylight across an open plain some 1200 mounted infantry and six guns under Colonel Grenfell. The

<sup>1</sup> An interesting summary of these attacks will be found in Mr. Erskine Childers' *War and the Arme Blanche*.

Boers were in close order. Their advance faltered at 300 yards from the British line, and ended at 100 yards, when they fell back, leaving on the veld fifty dead and thirty badly wounded. The British lost seven killed and fifty-six wounded, mainly owing to fire from the saddle.

An attempt has been made to resuscitate from these facts the idea started by a German writer after the 1871 war, that cavalry should be abolished as useless lumber and that mounted riflemen, trained to a vigorous offensive, should take their place. The General Staff have disposed of this suggestion in a full criticism of Mr. Childers' book.<sup>1</sup> In this criticism the value of vigorous offensive action and of the combination of fire power and mobility is frankly accepted. It is admitted that favourable opportunities for the use of the *arme blanche* are not numerous in modern war,<sup>2</sup> as compared with the number of opportunities for using the rifle. But exception is taken to the deduction from the South African experience that when mounted troops are charging the rifle is of more use than cold steel. At Bakenlaagte, the General

<sup>1</sup> v. pp. 256, 265, *Recent Publications of Military Interest*, General Staff, War Office, July, 1910. Harrison & Sons, St. Martin's Lane. Price 4d.

<sup>2</sup> Elandslaagte, Diamond Hill and the skirmish with Botha's rear-guard at Klipfontein (12th February, 1901) appear to have been the only instances of the use of the *arme blanche* in South Africa—all on a small scale. Compare also General von Bernhardt (p. 49, *Cavalry in Future Wars*): "Where as formerly the *arme blanche* was recognised as the principal method by which cavalry made its inherent fighting power felt, the employment of dismounted action nowadays has gained an importance to such an extent that the whole character of our activity appears completely changed."

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Staff point out, the Boers if armed with a lance or sword could have ridden right through the British defence and thus finished matters without the twenty minutes' fight which involved the risk of reinforcements arriving. At Roodewal similarly, had Grenfell's men been equipped with the *arme blanche*, the most effective reply to the Boers would have been to meet them by fire from a portion of his force till their attack faltered, and then to clinch the matter by a charge of the remainder with the *arme blanche*. "This example seems to us to show the value of a training in which various tactical methods and various weapons can be utilised and combined." The General Staff, moreover, do not hesitate to compare the *arme blanche* of the cavalryman with the bayonet of the infantry soldier. "After South Africa many theorists recommended the latter's abolition. Yet deeper thinking has led to the conclusion that the moral effect of the bayonet is out of all proportion to its material effect, and not the least important of the virtues claimed for it is that the desire to use it draws the attacking side on. . . . To take the sword from the cavalryman would be to some extent to take away their desire to close." Moreover, "What is its effect on the enemy?" The examples of Woerth and Gravelotte show the dread of the bayonet, and charging cavalrymen are, it is urged, more terror inspiring than charging foot soldiers. Finally, while admitting that, if it were true that the cavalry could learn effectively the use of one weapon only, that one should be the rifle, the General Staff point out that,

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in the opinion of cavalry officers, regular cavalry can be trained to both. "The combination of the power of the two weapons seems to us the ideal to aim at, and we cannot agree that it is beyond our reach."

To these authoritative comments may also with advantage be appended a recent pronouncement of the present Chief of the Imperial General Staff:

*"How, I ask, can the cavalry perform its rôle in war until the enemy's cavalry is defeated and paralysed? I challenge any cavalry officer or foreigner to deny the principle that cavalry acting as such against its own arm, can never attain complete success unless it is proficient in shock tactics. Cavalry soldiers must of course learn to be expert rifle shots, but the attainment of this desirable object will be brought no nearer by ignoring the horse, the sword or the lance. On the contrary, the élan and dash which perfection in cavalry manoeuvres imparts to large bodies of horsemen will be of inestimable value in their employment as mounted riflemen, when the field is laid open to their enterprise in this rôle by the defeat of the hostile cavalry."*<sup>1</sup>

<sup>1</sup> v. p. 22 of Sir John French's Introduction to Bernhardi's *Cavalry in Future Wars*, translated by C. S. Goldman.

## CHAPTER IV.

### THE CHARACTERISTICS OF THE FIGHTING TROOPS.

#### CAVALRY AND OTHER MOUNTED TROOPS (CONTINUED).

ONE of the most remarkable features of the Russo-Japanese war of 1904-5 was the numerical superiority of the Russians in cavalry. Russia put in all in the field 225 squadrons, Japan but sixty-six.<sup>1</sup> Of the former only eighteen squadrons were regular cavalry, the remainder Cossacks. The Russian cavalry, both regulars and Cossacks, had been trained for mounted, as well as dismounted combat, but the musketry instruction, even of the regulars, fell short of the requirements of modern warfare, while that of the Cossacks was still more inferior. Their officers were of a poor type, both professionally and socially, while the system under which each<sup>2</sup> soldier provided his own horse, equipment and saddlery, receiving inadequate compensation in case of loss or damage, rendered the men disinclined, even on service, to expose their property to risk.<sup>3</sup> The Russian regular

<sup>1</sup> *Reconnaissance in the Russo-Japanese War*, by Asiaticus, translated by Captain J. Montgomery, 3rd Hussars, p. 16.

<sup>2</sup> *Ibid.* p. 14.

<sup>3</sup> *Official History (Naval and Military) of Russo-Japanese War*, vol. i. p. 27.



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cavalry was armed with sword, rifle and bayonet;<sup>1</sup> the Cossacks carried no bayonet, but the front rank of the majority of the regiments had the lance. Regulars were well mounted—the Cossacks but indifferently, but the ponies of the latter showed great endurance. The Russian cavalry was organized at the outset in separate divisions and brigades. No divisional or corps cavalry was detailed, the duties of divisional cavalry being for the most part carried out by mounted infantry; yet detachments for that purpose were made from the cavalry divisions when specially required.

The greater portion of the cavalry of the Japanese army was, on the other hand, assigned to its divisions, to each division being allotted a regiment of three or four squadrons. The remaining squadrons—sixteen in all—were organized in two brigades. The men were armed with swords and with the 1897 carbine, slung on the back, and taking the same cartridge as the rifle. Six machine guns were assigned to each of the two cavalry brigades. The Japanese cavalry, "like that of European nations, was trained principally for shock action, but was also taught to fight on foot."<sup>2</sup> The men, though specially picked for the mounted service, were, for the most part,

<sup>1</sup>The Russian cavalry was given rifle and bayonet in 1885. The *Moscow Gazette*, in announcing the fact, claimed that "Russia has made a great step; her cavalry is in front of that of other Powers, and that probably for a long time" (*v. La Revue Militaire des Armées Étrangères* of that year, pp. 707-722).

<sup>2</sup> *Official History of Russo-Japanese War (Naval and Military)*, vol. i. pp. 19, 20.

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indifferent riders, while the horses lacked speed and endurance, and were, besides, overweighted.

In any comparison, therefore, made before the war, between the Russian and Japanese cavalry, there was not sufficient evidence to justify an expectation that the efficiency of the latter could counterbalance the great numerical superiority of the former. Yet throughout the whole campaign, Russia reaped neither strategical nor tactical advantage from that superiority. At the outset the seven weeks' reconnaissance in Korea of Mischenko's eighteen squadrons and six guns (17th February-2nd April, 1904) was blocked persistently by the weaker Japanese cavalry, acting in conjunction with infantry detachments. Mischenko thus lost the initiative, and fell back prematurely across the Yalu without gaining any accurate information as to the Japanese strength and dispositions. Zasulich, who, towards the end of April, 1904, took over the command of the Russian forces behind the Yalu, had twenty-four squadrons at his disposal to his opponent's nine. Yet the Russian commander remained ignorant of the Japanese dispositions and point of attack up to the very moment of the battle (29th April-1st May), although the Japanese staff had meanwhile acquired by reconnaissance accurate and full information as to the Russian defensive arrangements.

Again, after the advance of the Japanese 1st Army to Feng-huang-cheng, Rennenkampf was detached for strategic reconnaissance to Saimachi with two Cossack brigades, three rifle battalions and two batteries. Based on that place, he covered in a month (4th

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May-3rd June) some 450 miles in reconnaissance marches, and yet achieved nothing, being unable to penetrate the mixed screen of cavalry and infantry with which Kuroki's force was shrouded.<sup>1</sup> Indeed, the Russian cavalry did worse than nothing, for their reports were at times mischievous in their inaccuracy.<sup>2</sup> A raid at this period made across the Yalu against Anju by 500 mounted men under Colonel Madritov was effectually repulsed by seventy reservists, assisted by some thirty non-combatants.<sup>3</sup> Nor did the Russian cavalry do any better on the western side of the theatre of war. Kuropatkin's headquarters could obtain no reliable reports as to the strength of Oku's army, advancing to repel Stackelberg's counter-stroke. The Japanese staff, on the other hand, by constant cavalry reconnaissance and the free use of spies, were fully informed as to the strength, grouping and composition of the Russian force.<sup>4</sup> At the battle of Te-li-ssu the Russian cavalry posted on the right flank and slightly superior in strength to Oku's, not only failed to warn Stackelberg of the advance of the 4th Japanese Division,<sup>5</sup> but withdrew without attempting to cover the flank thus laid bare to Major-General Ando's attack.<sup>6</sup>

<sup>1</sup> *Reconnaissance in the Russo-Japanese War*, p. 93.

<sup>2</sup> *E.g.* the assessment of a weak Japanese detachment as a division caused Kuropatkin to weaken by a brigade the force given to Stackelberg to relieve Port Arthur, *v.* p. 252, *Official History*, vol. i.

<sup>3</sup> *Official History (Naval and Military)*, vol. i. pp. 250-1.

<sup>4</sup> *Ibid.* pp. 178-9 and p. 425, also *Reconnaissance in Russo-Japanese War*, p. 108.

<sup>5</sup> *Official History*, vol. i. p. 425.

<sup>6</sup> *Ibid.* p. 193, also *Reconnaissance in the Russo-Japanese War*, pp. 111-12.

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At the battle of Liao-yang, Kuropatkin had 152½ squadrons at his disposal; Oyama but thirty-three squadrons;<sup>1</sup> at the battle of the Sha-ho the Russian Commander-in-Chief had 143 squadrons to oppose fifty Japanese squadrons;<sup>2</sup> at the battle of Mukden the Russians again had 142 squadrons as against sixty-six Japanese. Yet in not one of these three prolonged struggles did Kuropatkin reap the slightest advantage from his great superiority in the mounted arm. At Liao-yang neither Japanese nor Russian cavalry distinguished themselves. But at the Sha-ho the Japanese 2nd Cavalry Brigade under Prince Kanin gave the *coup de grace* to Stackelberg's offensive movement,<sup>3</sup> while on the western flank Akiyama, with but twelve squadrons, a battery and a couple of battalions played with and controlled throughout the battle Dembovski's sixteen squadrons, thirty-two guns and twelve battalions, perhaps the most notable cavalry achievement in the war.<sup>4</sup> At Mukden, the failure of the Russian cavalry is the more marked in that the Russian defeat was due to the concealment of Nogi's army behind Oku's, to the skilful drawing away of the Russian main reserve to the eastward by the vigorous advance of the Japanese V. Army in the opening phase of the prolonged fight, and to the gradual envelopment of the Russian left

<sup>1</sup> *Official History of Russo-Japanese War*, part iv. p. 12.

<sup>2</sup> *The Battle of the Sha-ho*, translated from the *Militär Wochenblatt*, p. 18.

<sup>3</sup> *Official History of Russo-Japanese War*, part v. p. 76.

<sup>4</sup> *Ibid.* pp. 107, 113 and 122.

by Nogi's flank march and Oku's right wheel, the exposed head and flank of Nogi's columns being covered during this daring manœuvre by the two Japanese cavalry brigades, reinforced to a strength of forty squadrons and formed into a division under General Akiyama. The story of this, the greatest battle in modern war, in fact drives home the lesson that mere numerical superiority will not suffice to gain success in the co-operation of cavalry with the other arms, unless assisted with resolution, energy and tactical skill. Had the latter qualities been displayed on the Russian side, not only would the presence and position of the III. Japanese Army have been detected at the outset, but the mobility and fire power of the superior cavalry should have sufficed to outflank the flanking movement and prepare the way for a smashing counter-stroke.<sup>1</sup>

Nor too was failure avoided in the only great raid attempted by the Russian cavalry, that of Mischenko's from Mukden (8th-16th January, 1905). An excellent objective had originally been selected, the severance of the Japanese main line of communications by the destruction of the railway between Hai-cheng and Ta-shih-chiao, a section, which by reason of its severe gradients, cuttings and curves, would, it was hoped, prove difficult to repair, if systematically broken up. This objective was, however, given up in the belief that the Japanese garrisons of Hai-cheng and Ta-shih-chiao might make it impossible for Mischenko's force to

<sup>1</sup> v. General de Negrier's interesting suggestion as to this, *Lessons of the Russo-Japanese War*, translated by E. Louis Spiers, pp. 37-8.

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remain astride of the railway long enough to complete its effective destruction. German critics condemn this change of plan, holding that Yinkhow, the alternative objective, was but of secondary importance, for at that season of the year ice closed its harbour, although large reserves of Japanese supplies had been stored in the town.<sup>1</sup> Yet against this criticism may be set the rapidity and ease with which breakages of railway line were repaired in the South African war. Be that as it may, Mischenko's 9000 horsemen and thirty-four guns failed, owing to delays on the march, to surprise Yinkhow, allowed two Japanese battalions to reinforce the garrison under their very eyes, and finally after but an hour's fire fight, carried on by but twenty-five out of the sixty-six Cossack squadrons, fell back and abandoned their enterprise.<sup>2</sup> The severity of the cold, the roughness of the ice-bound country, and the opposition of numerous bands of Chinchuses no doubt all militated against success; yet it is open to conjecture whether the resolution of a Stuart or of a Wilson, or the resourcefulness of a De Wet would not have overcome these difficulties.

The failure of the Russian cavalry in the Manchurian campaign to render, either strategically or tactically, effective assistance to its army cannot, however, be

<sup>1</sup> *v. Reconnaissance in the Russo-Japanese War*, pp. 122-3.

<sup>2</sup> Although the conditions were not quite similar, it is useful to compare this miscarriage with the splendid success achieved by Wilson in his march across Alabama and Georgia, a success achieved by the ability of his horsemen to attack and carry on foot strong entrenchments held by large garrisons.

held to indicate the impotence of the cavalry arm in modern war, for against this failure may be set, not merely the defective training and leadership of the Cossack squadrons, their almost total lack of the true cavalry offensive spirit,<sup>1</sup> and the difficulties of the country in which they were called upon to operate, but the loyal, substantial, and effective co-operation of the Japanese cavalry with the other arms, both strategically and on the battlefield, inferior though that cavalry was numerically to that opposing it. Its success in reconnaissance and screening duties has been already touched upon, yet it must be admitted—and the admission is one of much importance—that in the former task the mounted arm was greatly supplemented, strategically by the Japanese Intelligence Staff, and tactically by the general acceptance throughout the Japanese army of the principle that constant reconnaissance is the duty, not of one, but of all arms. Again, in its protective work, a system of stiffening the cavalry screen with detachments of the other arms was adopted by the Japanese General Staff with most satisfactory results.

Numerical weakness made the attempting of any great strategic raids obviously impossible for the Japanese cavalry. Nevertheless, in the critical time

<sup>1</sup> In a Memorandum on the Russian Army written before the war by General Fujii, the Commandant of the Japanese Staff College, it was stated that "the Cossacks made no heroic movement in the war of 1877 and thus reports were all exaggerated. . . . If our infantry is a little careful, we have nothing to fear from the Cossacks." In an order published to his army in October, 1905, Kuroki, too, noted that "There is nothing to be feared from the hostile cavalry."

just before the battle of Mukden, work of that nature on a small scale was carried out in a notable manner and with marked success by three gallant officers, Captain Nayanuma, Lieutenant Nakaya and Lieutenant Miyanchi. Nayanuma, leaving Heikoutai on January 9, 1905, accompanied by selected men and horses, in strength about two squadrons, swung round Kuropatkin's armies and struck the Russian main line of communications at Hsin-kai-ho, 130 miles north of Mukden, blew up a railway bridge there and rejoined on the 30th March his own army, having in seventy days marched 800 miles through the enemy's country, in the depth of winter. Nakaya similarly with thirty-nine mounted men succeeded in destroying the railway near Miao-tzu-ho station, eighty miles north of Mukden, covering 250 miles in eight days, while Miyanchi, with but thirty-four horsemen, cut the line a little to the north of Miao-tzu-ho, traversing 360 miles in twelve days. These raids seriously alarmed Kuropatkin, always sensitive as to his communications, and induced him to order the detention locally of a substantial portion of the Russian reinforcements on their way to the front. They thus materially assisted the Japanese main armies in their desperate task round Mukden.

At Mukden (*v. p. 86 ante*) and at Te-li-ssu, where the 3rd Cavalry Regiment and the 1st Cavalry Brigade rendered effective service in assisting in the repulse of the Russian counter-attack, the Japanese mounted troops established their capacity to co-operate with the other arms tactically on the battlefield. This co-



operation was in both cases effected by fire action. So too on the Russian side, Samsonov's twenty-seven squadrons, during the battle of Liao-yang, by dismounted action relieved the heavy pressure on Orloff's detachment at Yen-tai. The charge of the two Cossack squadrons in the first fight at Te-li-ssu (30th May, 1904) was in fact the only instance of cavalry shock action which occurred during the war.<sup>1</sup> In all other cases, even when cavalry met cavalry, the troops on both sides used their fire weapons only.

As after the war of 1870-71, so now much controversy has arisen as to the lessons to be deduced from the latest experiences in war of the cavalry arm. Some optimists on the one hand, still hold that the true cavalry leader should shun as much as possible the use of the rifle, and still dream of the advent of a great genius for handling the mounted arm who will repeat the achievements of Seydlitz on the battlefield. Pessimists, on the other hand, are clamorous in their cries for the casting of sword and lance on the scrap-heap and the final reduction of cavalry to the duties of mounted riflemen. The quotations given on pp. 79-81 will have already indicated that the authorities of the British Army steer an even course between these extremes. The Committee of Imperial Defence, moreover, agree with the Austrian critic—Count Wrangel—in holding that the achievements of the Japanese cavalry would have been greater, had not three-quarters of its

<sup>1</sup> *Official History (Naval and Military)*, vol. i. pp. 174-5.

strength been tied, as it were, to the infantry as divisional cavalry.<sup>1</sup>

It is true, no doubt, that of all the arms of the service, cavalry has suffered most in value through the improvement in modern weapons, yet strategically its use both in the American Civil war and in the 1870-71 war was found to have increased, and this experience may perhaps be renewed in the next great war, although the probability of this renewal is much diminished by the advent of the flying arm. Tactically the great decisive cavalry charge on the main battlefield is a thing of the past, yet training in shock tactics is claimed by all cavalry authorities to be still essential to the strategic use of the arm, and even on the battlefield shock tactics may, under special conditions, conceivably still be possible, while brilliant opportunities will almost certainly be offered for the employment in perhaps a decisive manner of the power conferred by the combination of mobility with fire action.

The tendency to strengthen the cavalry division by adding to it cyclist battalions, mounted infantry and even, as in the Russo-Japanese war, infantry battalions,<sup>2</sup> indicates clearly the increasing importance of the rifle. The true spirit of cavalry action in future wars will probably be found in a skilful

<sup>1</sup> *Official History, Russo-Japanese War (Naval and Military)*, vol. i. p. 425.

<sup>2</sup> There were, of course, previous examples, e.g. the three regiments of Baden cavalry in the advance on Strasburg in 1870 were accompanied by six infantry companies carried in wagons, v. *Official History, Franco-German War*, vol. i. p. 265.

combination of fire action with shock action, and a readiness to use either as occasion may demand. It should therefore be the ambition of every true cavalry soldier to be not only a better horseman and swordsman than his mounted opponent, but also a better shot and a more bold attacker on foot with the rifle than any enemy either of the cavalry or infantry arm. For, whatever tactics are adopted, the desire to take the offensive will always remain the breath of life for cavalry, and where shock action is impossible, the cavalryman must be prepared to expend, rifle in hand, the last man in an advance on foot, if victory can thus only be secured.<sup>1</sup> This is, indeed, no new dictum. Von Schmidt, in issuing in 1875 his *Instructions for Cavalry*, pointed out the efficiency of Frederick the Great's cavalry in the use of fire-arms, and declared<sup>2</sup> that in that glorious period cavalry lost nothing of its true spirit—they did not forget to charge with the *arme blanche*, although they had much more training in fighting on foot than nowadays, and had very frequently to obtain their successes by fighting in that manner. The most important duties of cavalry, however, will remain the service of reconnaissance, of screening and of raids, and (seeing that the lines of communication of modern armies continue constantly to increase in sensitiveness) it may perhaps prove in the future, that a cavalry division will

<sup>1</sup> Thus *Cavalry Training* (section 216 (5)) says: "Occasions will arise when cavalry will have to drive home a determined attack on foot."

<sup>2</sup> *v.* p. 189 of Colonel Bowdler Bell's translation.

exercise more influence on the decision of a great battle by operating in rear of the enemy's army, than by its presence on the actual battlefield.<sup>1</sup>

It is as yet premature to forecast too closely the influence which the development of air-craft will exercise on cavalry work in the next campaign; but it must be remembered that the threefold duties of cavalry are:

- (i) Reconnaissance.
- (ii) Protection.
- (iii) Use in battle to complete success or cover retreat.

As regards the last, there are no signs that air-craft will be ever able to relieve in any way the mounted troops of their responsibilities.

The assurance of freedom from molestation may be secured to a considerable extent from the reports of aeroplanes, when the enemy is at a distance, but as he approaches, the services of the cavalry will be essential to obtain repose to troops in billets, to screen the columns on the line of march, and to cover the points of assembly for battle.

Reconnaissance, especially strategic reconnaissance, is a more open question. The great importance which command of the air is likely to attain in the next war, will be discussed in another chapter; but against this must be set the fact that air-reconnaissance cannot be constant. It is essentially rapid; is limited to the day-time, and moreover even then to a certain extent dependent on atmospheric conditions.

<sup>1</sup> The views expressed in this paragraph have been in the main culled from General F. von Bernhardt's latest work, *Cavalry*, Berlin, 1909.

*"On the other hand, cavalry reconnaissance is characterised by the permanence of day and night contact; it has less opportunity than the aeroplane of discovering the enemy's masses, but, by the numerous points of contact, which it has established with the enemy, it may succeed by means of progressive bounds, gradually to determine the apparent line, if not the exact situation. Thus the aeroplane should not replace the cavalry, even for reconnaissance. Its action should supplement and complete it."*<sup>1</sup>

These views seem moderate and well-reasoned. How far aeroplanes and dirigible balloons may eventually be able to take over entirely the strategic duties of cavalry lies still perhaps in the lap of the gods, but that the trained mounted man will be ever wholly superseded in war may be deemed highly improbable so long as war lasts. It may indeed prove that a diminution in the strategic duties of cavalry will leave the arm freer and fitter to play its part in the main battle.

## MOUNTED INFANTRY.

"Mounted Infantry acts by fire." "Mounted Rifles, when co-operating with cavalry, assist the latter to combine fire action with shock action; when co-operating with other arms, their mobility enables a commander to transfer them rapidly from one portion of the field to another, and thus to turn to account opportunities which he would be unable otherwise to seize."—*Field Service Regulations*, 1912, section 3 (2).

Although a mounted infantryman is in some respects the modern representative of the continental

<sup>1</sup> "Report of the Chamber of Deputies' Budget Commission upon the Aeronautical Section, French Budget, 1912, *Army Review*, vol. ii. p. 498.

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dragoon of the eighteenth century, and although the increase of the limited mobility of infantry by the use of camels, ponies and carts, figures in the Napoleonic wars, yet the modern development of what some have regarded a hybrid arm, is of British origin, and having proved a success in a series of minor campaigns, fought in almost every quarter of the globe, was first adopted permanently in the British Army.

The conclusions set forth in previous pages suggest that under the conditions of modern warfare it is necessary on the one hand that the cavalry soldier should be thoroughly instructed in the use of his rifle and in offensive as well as defensive dismounted duty, and on the other, that he should continue to be equipped with the *arme blanche*. It follows, therefore, that man for man, the fully trained cavalryman is better fitted to meet all the eventualities of active service and therefore more valuable than the mounted infantryman, even given the supposition that in horsemanship and horsemastership the efficiency of the two were equal. Thus at first sight it would appear to be illogical to create another type of mounted troops admittedly inferior to the cavalry arm, but this creation is in fact necessitated by the financial limitations, which in all states and under all conditions of army organization and military service, inevitably govern, and will always govern war preparations. Cavalry is the most expensive of the three arms. It would no doubt be an attainment of the ideal if all the mounted troops needed by the army in the field were composed solely of fully trained

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cavalry, but the cost of their peace maintenance would involve either increased expenditure or a curtailment of the other arms.

Moreover, the large extent to which fire action has taken the place of shock action enables the infantryman, when trained to ride and scout on horseback, to supplement to a substantial degree the cavalryman in a certain portion of his field duties, and thus set free the specialist for the most important of his responsibilities. Thus it has been deemed possible in British War Establishments to detail Mounted Infantry companies to carry out the duties of Divisional Cavalry, and to draw largely on Mounted Infantry for the requirements of the independent mounted brigades (*v. p. 48 ante*).

The *raison d'être* of mounted infantry is therefore its comparative cheapness, not in the field (for when once mobilized its cost of maintenance is but a little less than that of cavalry), but during the war preparation of peace time. This cheapness is due first to the comparative brevity of its period of training in mounted duties, and secondly to the fact that since shock action is not part of mounted infantry's rôle, the maintenance in peace time of a large number of highly trained horses is unnecessary. A few cobs suffice for the training in riding and mounted duties generally of a large number of successive classes of men, previously trained in all the normal duties of an infantry soldier.

It is clear however that this period of training in mounted work of the Mounted Infantry must be long

enough to ensure his efficiency in the duties required of him. Officers, who have had experience in attempting to convert rapidly even picked infantry soldiers into mounted men, know well that the introduction of such an unknown factor as the horse into the sphere of the infantryman's duty tends at the outset to affect him in a peculiar manner. All ranks take immense pride in their promotion to mounted duty, but the non-commissioned officers as well as the men lose for a time that self-confidence and resourcefulness which assured knowledge of efficiency engenders, and thus until full efficiency in mounted work, and with it self-confidence, are attained, there is a certain deficiency even in morale. To this and similar causes may be attributed the failure of the improvised Mounted Infantry at Lang's Nek in the first Boer war, the slowness and lack of dash of the newly formed mounted infantry corps in the operations leading up to the action of Paardeberg in the South African war, and the initial inefficiency of the second and still more of the third contingents of the Imperial Yeomanry, recruited in this country for employment in the latter campaign. The splendid service in that campaign of the Mounted Infantry when once trained makes it the easier thus to admit frankly its failure to accomplish the impossibilities of being efficient without training. Nor can the reality of this impossibility be impugned by quotations of the fighting qualities of certain special corps, trained hastily in the late war, as for example the Imperial Light Horse, for such units were recruited mainly from men who had learnt before enlistment



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how to handle horse and rifle, and were drawn mainly from a social class to whom discipline is taught in boyhood at school.

Although now eliminated from the Expeditionary Force the mounted infantryman or yeoman must be thoroughly trained in the duties assigned to him, for Home defence, and it is obvious that these duties now involve a good deal more than mere ability to remain on his pony, while being conveyed at a trot from one position to another. When used as Divisional Cavalry full responsibility for all the local scouting duties of the cavalry arm must be accepted by him. Organized in mounted brigades they will be required to carry out the protective work of the mounted arm, and may be directed to execute strategic missions. When the main issue is to be decided on the battlefield, the fighting power of the mounted infantryman should greatly enhance the possibility of being employed to deliver some great stroke against the enemy's flanks or rear, in pursuing the beaten enemy, or covering the retirement of its own army.

The suggestion must be emphatically rejected that the duties of the Mounted Infantry can be differentiated from those of Mounted Riflemen and that an inferior standard of efficiency may be accepted from the former. Mounted Infantry, Mounted Rifles, or Yeomanry are in reality synonymous terms, and their training should so far as possible be identical. The restriction of Yeomanry to training for fire action only is in fact mainly due to the same motive as that of Mounted Infantry, the motive of economy, but

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the economy to be effected in the case of Yeomanry is not of money, but of time. As to this a recent authoritative utterance of the General Staff may be quoted:

"Yeomanry, and similar bodies of troops, who train only for a few days in the year *cannot be* expected to meet highly-trained Regular Cavalry on equal terms, however we arm them; and matters cannot be equalized by any increase in the number of weapons they carry. On the whole they will stand a better chance armed with one weapon which they have acquired some skill in using, than if they had more than one, were unskilful with each, and lacking in judgment as to which to use."<sup>1</sup>

The work of the Mounted Infantry in South Africa has in fact opened to it a future, the limitations of which are not easy to fix, and its war efficiency has become a matter of great importance to the whole army.

### CYCLISTS.

"Cyclists are especially suited for employment in enclosed country where roads are good and numerous. They can traverse long distances and move more quietly than horsemen. Cyclists act by fire, and can develop more fire in proportion to their numbers than other mounted troops, as they do not require horse holders. They are largely dependent on the number and condition of the roads for the development of their special characteristics."—*Field Service Regulations*, section 3 (3).

In the *Cyclist's Training Manual* the General Staff further point out that:

"*Compared with mounted troops cyclist troops move*

<sup>1</sup> *Recent Publications of Military Interest*, No. 14, p. 265. Harrison & Sons, St. Martin's Lane.

*more noiselessly, create less dust, are less conspicuous, can conceal themselves with greater facility, are more easily transported by rail or boat. . . . They are more easily billeted and supplied both as regards water and rations."*<sup>1</sup>

In the British Service the only recognized cyclist units are the Cyclist Territorial Battalions organized for home defence. The duties assigned to these battalions are threefold, viz. :

- (i) To watch such harbours and stretches of coast, when a landing is possible as are not within the *rayon* of a defended port.
- (ii) To obtain and transmit "information as to landings and as to the enemy's strength and dispositions."
- (iii) To prevent "an enemy landing or to harass and delay him when he has landed."<sup>2</sup>

In reviewing their duties the General Staff lay great stress on their importance. They are not only "of great responsibility, but of great honour; they demand of each individual a high state of readiness, skill, and self-sacrifice, and afford wide scope for boldness and initiative."<sup>3</sup>

Moreover the rôle of the cyclist is not confined only to this highly important strategic work, as the first line of the mobile defence. "*If forced back on the field armies, the cyclist units will continue to be used for protective duties and for assisting Cavalry or*

<sup>1</sup> *Cyclist Training (Provisional)*, 1908, section 10.

<sup>2</sup> *Ibid.* section 11.

<sup>3</sup> *Ibid.* section 18.

*Yeomanry in operations against an enemy's flank and rear. On the battlefield they will usually be employed on the flanks, but advantage may be taken of their mobility to reinforce weak points in the line, to resist counter-attacks, or for a rapid transference of strength from one point to another for offensive action. In the pursuit, cyclists should prove especially useful in an enclosed country for making long detours and seizing positions to head off the retreating enemy."*<sup>1</sup>

It must be borne in mind however that these observations, highly though they rate the strategic and tactical potentialities of cyclist units, have been recorded by the General Staff for application to the problem of home defence, and that cyclists, except as orderlies, do not as yet figure in the War Establishments of the Expeditionary Field Force. No doubt the conditions of home defence are more favourable to the employment of cyclists than those of oversea service, for under the latter road communications are unlikely to be so good and numerous as in the United Kingdom, the strength of the enemy's mounted troops would not be restricted by the limitations of sea transport, and with the enemy would lie the advantage of local knowledge of the country. Moreover the cyclist has as yet not been really tested on active service. The few cyclist companies improvised in South Africa during the war form no fair criterion of the arm, defective as they were in training and battle discipline, while the open veld with its few and bad tracks was as unsuitable to such an experiment as the

<sup>1</sup> *Cyclist Training*, section 17.

fen country would be for cavalry action.<sup>1</sup> Nor, though one or two trials have been made (notably in the Essex army manœuvres of 1902, where 150 "Intelligence Scouts" rendered excellent service in the advance of the invading force, and again in the Cambridgeshire manœuvres of 1912), do manœuvres as yet throw sufficient light on the use of cyclists in the field to give assured data for their further development.

Yet the possibility of employing cyclists to strengthen the strategic cavalry, or even in part as a substitution for cavalry or mounted infantry in the protective mounted brigade, is certainly attractive, and merits examination. As to this General Bernhardt may be quoted. He advocates not only the systematic use of cyclists on relay duties for the transmission of reports from the advanced cavalry headquarters, but also their employment for the protection of stationary posts and defined stretches of road, "for the rapid occupation of far advanced posts, which neither Cavalry nor Infantry can reach with sufficient celerity and adequate force, for the defence of defiles lying in our rear, which must be kept open to secure the retreat of Cavalry, for the support of independent cavalry on outpost duty particularly at night, and for other similar service."<sup>2</sup>

Some tentative experiments have been made recently

<sup>1</sup> Yet on the first day of the war, Sergeant Alison, of the Natal Corps of Guides, reconnoitred alone on a bicycle the road from Ladysmith to Olivier's Hoek, and returned with information as to the position of the Boer picquets holding that pass, having covered over ninety miles in twenty-four hours.

<sup>2</sup> v. *Cavalry in Future Wars*, pp. 147-8.

in this direction in France by the attachment of one or more cyclist companies to cavalry divisions at manœuvres, but they seemed to have lacked thoroughness, and to have been carried out without much belief in their success. The use of a considerable force of cyclists in connection with other troops no doubt presents certain difficulties. Their normal marching pace is higher than that of any other arm, and cannot be reduced except by dismounting. They cannot, therefore, without fatigue and loss of mobility, march immediately in rear of either cavalry, artillery or infantry. They occupy four times the road space required by cavalry. Their rate of marching is much more dependent on the state of the roads than that of the other arms, and may be diminished thirty to fifty per cent. by a strong contrary wind. Off the road the movements of cyclists are slower than those of infantry. In the attack the machines must be left behind, and if the attack succeeds the cyclist must get back to his cycle on foot before he can use its mobility in pursuit.

On the other hand, cyclists can make forced marches of greater length at a greater pace, and with far less loss of efficiency than is possible for cavalry or mounted infantry. They can more easily dispense with all transport (except motor transport for ammunition and entrenching tools) and live on the country. They are capable of more continuous hard work. Their fire power in action is not subject to any reduction for horse holders. It is difficult, therefore, to resist the conclusion that in a theatre of war, where

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the country is enclosed, and the roads many and good, the army which strengthens its mounted troops, and in particular its strategic cavalry, with cyclist battalions, may reap therefrom much advantage. It was no doubt the inferior strength of the Japanese cavalry which induced the practice in Manchuria of attaching infantry battalions to cavalry brigades, and of stiffening the cavalry screen with infantry detachments. This system, as we have seen, worked admirably. Its one drawback—the slowness of infantry—would be done away with in a country with good communications, if well-trained cyclist units were substituted for ordinary infantry battalions.

## CHAPTER V.

### THE ROYAL FLYING CORPS.

"One of the most valuable means of obtaining information at the disposal of a Commander is the Air Service."—*Field Service Regulations*, part i. section 95 (1).

THE object of this book is the illustration from history of the principles set forth in the *Field Service Regulations*. Flying had not been sufficiently developed at the date of the publication of these *Regulations* to permit of its detailed consideration as an adjunct of war. Nor, though aeroplanes and dirigible balloons have been useful to the Italian Army in North Africa, and again in the Balkans, has their testing on service been yet sufficient to establish data from which basic principles as to their strategic and tactical employment can be built up. Yet their adoption in all the principal armies and navies of the world is proof that they will figure prominently in the next great campaign, and compels close attention to their possibilities. It may be permitted, therefore, and indeed it is necessary, to touch briefly on this consideration, although it eludes almost entirely the scope of historical elucidation.



Prior to the recent North African experiences the examples of the use of air-transport in war are limited to those of stationary balloons. Such balloons accompanied our troops in South Africa and rendered a certain amount of assistance in tactical reconnaissance at Ladysmith, during the operations on the Tugela, and at Paardeberg. During the Manchurian campaign they were not employed at all by the Japanese, but were used by the Russians at Liao-yang, the Sha-ho and Mukden, for reconnoitring purposes, and to observe and direct artillery fire.<sup>1</sup> The results attained were, however, evidently not very substantial, for we are told that when the captive balloon of the Xth Corps was carried off by a gale of wind during the battle of the Sha-ho, its disappearance was watched with secret delight by the Russian Staff officers who had been detailed to go up in it daily, but who "were never able to see anything."<sup>2</sup>

The invention of aeroplanes and dirigible balloons has, however, made absolutely obsolete all these experiences. The Italians have established beyond doubt in North Africa the practical value of flying for reconnaissance work in war. Peace trials have illustrated still more plainly its future possibilities. Perhaps the most striking illustration of these possibilities are the series of tests imposed by the French War Office in 1911 on the aeroplanes submitted by private manufacturers for purchase by the State for

<sup>1</sup> v. *Rivista di Artiglieria e Genio*, November, 1907.

<sup>2</sup> von Tettau, *Achtzehn Monate mit Russlands Heeren in der Mandchurei*, vol. ii. p. 56.

military purposes. These tests comprised six flights, three of which required landing in a ploughed field, and landing and restarting in clover and stubble. The final test was a flight of 300 kilometres out and return without landing with 300 kilograms of useful weight. The winning machines accomplished this distance in two hours thirty-four minutes, thus maintaining an average speed of 177 kilometres an hour.<sup>1</sup>

The bearing of these amazing feats on the conduct of military operations hardly needs emphasizing. Captain Burke, Royal Irish Regiment, in a lecture delivered before the United Service Institution on 15th November, 1911, understated the case in suggesting that :

“It will usually be possible for the General in command of an army to despatch his staff officer as a passenger in an aeroplane to reconnoitre a point sixty miles away, and, if all goes well, the General will be in possession of that staff officer's report in less than three hours.”

The army manœuvres of 1912 in Cambridgeshire proved the truth of this forecast.

In France it is claimed officially that :

“At the present time the aeroplane allows a reconnaissance to be made at a speed of eighty kilometres an hour to a distance 100 to 125 kilometres in front of the army, *i.e.* at four days' march. The information brought back to the commander, if the machine has manœuvred outside the general line of march, will give the situation on a strip of country about seven

<sup>1</sup> *Army Review*, vol. ii. pp. 487-8

to eight kilometres wide. Further, the observations which it brings will have been made one or two hours previously, at most. Soon, no doubt, these reports will be transmitted instantaneously; on the 29th July, 1911, Captain Brenot and Lieutenant Menard, while they were moving at an altitude of 500 metres near Rambouillet, were able to transmit a message to the Minister of War *via* the Eiffel Tower, fifty kilometres distant.”<sup>1</sup>

Moreover, the value of the range and rapidity of an aeroplane reconnaissance is greatly enhanced by its accuracy of observation. Given good weather, the movements of troops are as clear to an observer in an aeroplane as the movements of the pieces on a chess-board.<sup>2</sup> When flying over a large open area, such as Salisbury Plain, even the hares catch the eye as prominent objects.

The amazing results, however, which have been already attained at peace trials and at manoeuvres must be subjected to a certain amount of discount before being applied to war. The achievements of flying appear to be dependent still to a certain degree on favourable conditions of the weather. No doubt the art is as yet in its infancy, and another five or ten years' experience will give increased mastery over atmospheric difficulties; but at present high winds, heavy rain, and even the heat of

<sup>1</sup> *v.* “Translation of Report of the Chamber of Deputies' Budget Commission upon Aeronautical Section, French Budget, 1912,” *Army Review*, vol. ii. p. 493.

<sup>2</sup> Captain Burke.

the mid-day sun affect more or less air reconnaissance. Moreover, the successes achieved have as yet been limited to the struggle against natural forces. The all-important factor—the opposition of the enemy—has not been taken into consideration. It is inevitable, since the area of operations of war will in future include the air, as well as sea and land, that a fight for the command of the air must take place, and that until that fight has been determined in our favour our air-craft cannot fulfil their mission. Little progress seems to have been yet made in the solution of the problem of bringing this fight to a successful issue, in the determination of the tactics to be employed and of the weapons to be used. But these are matters which are no doubt being very closely studied by the Royal Flying Corps and the General Staff, although until the stern test of war is forthcoming their final solution will remain in doubt.

It is evident, however, that air-craft will in the near future be organized and equipped for fighting as well as observing, and it seems further probable that as the development of air-ships and possibly aeroplanes proceeds, their power of offence may be used against other objectives than the hostile air-craft. Recent legislation in Great Britain has in fact indicated the conclusion of the highest authorities that there is need already for safeguarding localities such as dockyards against the danger of a surprise attack by air-craft. The possibility of similar attacks on a fleet at sea or on troops in bivouac, on the line of march, or concentrated prior to tactical deployment, may

become ere long a matter for careful consideration, and may further enhance the importance of air command.

Be that as it may, it is clear that the Commander-in-Chief who attains air-command should have at his disposal exact information as to his enemy's movements. He will be able to discern his opponent's strategic plans. He will know the extent and direction of the hostile strategic deployment, or the exact locality of the enemy's strategic concentration, and the strength of his advance force. In favourable weather he will receive every forenoon reports of the direction in which the hostile columns set out on their day's march; at sunset he will again be acquainted with their place of bivouac for the coming night. Meanwhile the enemy may or may not attain the secondary advantage of success with his strategic cavalry or his strategic advance guard. If the enemy fail also in that contest, then the fog of war will be for him indeed impenetrable. If he succeed, the light gained will be but as twilight compared with the clear and distant horizon which air-command will assure to his opponent.

On the other hand, it may be that neither side will succeed in attaining complete air-command. The air fight will probably in that case leave each greatly weakened in air-craft. It will be impossible for either to carry out a complete and constant air reconnaissance, and both will secure but imperfect information from that source. The strategic cavalry and strategic advance guard will thus regain their original

importance, and the few aeroplanes still efficient will supplement their exertions.

The tactical results of air-command, if attained, are perhaps not quite so certain as the strategic. In France and on Salisbury Plain it has been shown that under manœuvre conditions air-craft are a valuable auxiliary to artillery. A despatch from the Italo-Turkish campaign reports that :

"The Italian artillery, having succeeded with the help of an aeroplane driven by Captain Moizo in locating the position of the Turkish artillery, opened a violent fire, which the aeroplane reported as correct and efficacious." But it would seem more than possible, if such comparatively close reconnaissance cannot be stopped by shrapnel fire from the ordinary field gun or howitzer, special guns will be adopted for that purpose. Experimental guns have in fact been already devised and tried both in France and Germany.<sup>1</sup> Yet audacity and skill may elude this method of defence, and enable the army, which secures air-command, to obtain from it vital information, not only as to the position of the enemy's guns, but also as to his general tactical dispositions.

The fight for air-command is, however, an entirely new and unknown element in war. We have as yet little idea how it is to be carried out ; its issue is impossible to conjecture. No one can yet foresee whether its end will be mutual annihilation, or whether a victorious fleet of air-craft will be left in

<sup>1</sup> *v. Modern Artillery in the Field*, Colonel Bethell, pp. 73-81.

possession of the command of the air. One thing only is clear, that to obtain victory, courage, nerve, and skill of supreme quality will be requisite.

In continental armies the progress in developing the new arm has been extraordinarily rapid. France for instance expended in 1912 £960,000 on aviation and £320,000 on aero-stations. At the end of 1913 she will possess twenty-four airships and some 400 aeroplanes. Germany having allotted 9,000,000 thalers in 1912 to her air service is providing over £1,800,000 in 1913 for the construction of further air-craft. By the end of 1913 she will possess some thirty-two airships and 350 aeroplanes. Italy by the same date will have seven airships, and is organizing twelve aeroplane squadrons. Moreover, in addition to the expenditure of State funds on air-craft, large voluntary subscriptions have been freely forthcoming in all three countries.

In the French army the unit is the escadrille, containing eight machines, divided into three active and one reserve sections. Each section is equipped with two motor trailers and one lorry, and each escadrille has in addition one motor workshop and one motor car. The personnel of the escadrille consists of seven officer pilots, one administrative officer, four N.C.O.'s and forty-four rank and file, all of whom are specialists, and two N.C.O.'s and fourteen rank and file, non-specialists.<sup>1</sup>

The approved scheme for the French flying organization aims ultimately at providing twenty-seven field

<sup>1</sup> v. Note by General Staff, *Army Review*, vol. ii. p. 475.

## Royal Flying Corps

squadrons, five fortress units, and six for coast defence.<sup>1</sup>

The organization of the military wing of the Royal Flying Corps is set forth in the special Army Order of the 15th April, 1912. It will be observed that the seven aeroplane squadrons therein authorized are considerably larger than the French escadrille, and include three flights each of five aeroplanes. The total number of aeroplanes will, therefore be eighty-four.

The airship and kite squadrons will provide in addition two airships and two flights of kites.<sup>2</sup> A Flying Corps workshop unit will be organized for the line of communications.

It is perhaps unnecessary to add that this new development in war machinery demands and will continue to demand from its personnel the qualities of courage, coolness, and sacrifice to a degree greater than is required of any other arm of the service, certainly in peace time and probably also in war. The nation has had reason already to regret profoundly the losses which these demands have entailed on the Royal Flying Corps; but though the Corps will long mourn those gallant comrades whose lives were given to their country, the steadfast manner in which it has continued to perform its duty is a source of pride and satisfaction to the whole army.

<sup>1</sup> *v. Times*, 24th June, 1913.

<sup>2</sup> As airships are in future to become exclusively a naval charge, this squadron is about to be converted into an aeroplane unit.



## CHAPTER VI.

### ARTILLERY.

"The function of the artillery is to assist the other arms in breaking down hostile opposition. The invisibility which smokeless powder confers has, however, modified the extent to which artillery can assist the other arms by preparatory action. Till the enemy either discloses his dispositions by his own movements, or is compelled to do so by the other arms, artillery must usually limit its actions to preparing to support the latter as soon as occasion demands it.

"Quick-firing guns confer on a commander the power to develop a destructive fire with great rapidity, but fire of this character cannot be continuous for more than brief periods without risk of exhausting the available ammunition, and must be effectively controlled. Improved means of communication permit artillery commanders to exercise control over the fire and movements of dispersed artillery, so that concentration of guns is no longer necessary to ensure control and concentration of fire."—*Field Service Regulations*, section 4 (1) and (2).

CAVALRY, though an auxiliary, may in a sense be regarded as *par excellence* the great strategic arm, in that for it alone of the three branches of the fighting troops strategic duties are more important than tactical. Artillery, on the other hand, is helpless by itself, and capable only of employment in conjunction with cavalry or infantry. Its strategic duties are, therefore, wholly merged in those of the other arms, and present no characteristics requiring separate consideration. The direct function of artillery is

solely tactical, "To help the infantry to maintain mobility and offensive power."<sup>1</sup>

This function has remained unchanged since the first introduction of cannon, but the methods of its execution have been substantially modified by recent developments and improvement of material, so recent, indeed, that (the conditions of the South African war having been somewhat abnormal as regards artillery) we are compelled chiefly to rely on the experiences of the Manchurian campaign as a guide to their elucidation. These developments are four in number :

(a) The introduction of smokeless powder.

(b) The invention of quick-firing guns.<sup>2</sup>

(c) The increase in range, and the addition to armies in the field of guns and howitzers of increased calibre.

(d) The introduction of mechanical appliances which make it possible for guns to direct an accurate fire on hostile troops, while remaining invisible to them.

The whole art of tactics as well as of strategy may be condensed in one axiom : "Be superior to the enemy at the decisive point." This superiority may be in numerical strength, it may be in morale, or it may be in fire power or shock action, but superiority in some form at the right moment and in the right place is essential to victory. In all the great wars, since and including the Napoleonic epoch, excepting only the

<sup>1</sup> *Field Artillery Training (Provisional)*, 1912, p. 224.

<sup>2</sup> Neither side in the Manchurian campaign was equipped with a true quick-firing gun.

campaign of 1866, this principle was the governing factor in artillery tactics. With the comparatively short ranging gun and limited facilities for the observation of its fire, existing prior to the recent improvements in material, it was carried out "by massing the guns against the most important objective in the greatest possible strength and at the earliest possible moment."<sup>1</sup>

Thus, at Eylau (February 8, 1807), Napoleon brought the whole of his artillery into action in advance of his general line of battle, and endeavoured by its fire to open the way for the advance of Davoust's and Augereau's infantry. Yet this preparation was either not sufficiently intense or not sufficiently prolonged to crush the enemy's guns, who were able later to inflict such severe losses on the French columns, that a charge of Prussian cavalry finally repulsed the attack.

At Wagram (July 6, 1809) the turning of artillery against the objective of the main attack achieved its object. The 100 guns deployed by Napoleon in the gap between Massena's corps on his extreme left and Oudinot's and Davoust's corps on his centre did more than cover the advance of Macdonald's great column for the decisive stroke against the centre of the Austrian position. War wastage had deteriorated the fighting qualities of the French infantry, and the huge unwieldy columns of attack in which the Emperor now formed his battalions, were an ineffective weapon against a resolute, unshaken enemy. It was

<sup>1</sup> *Field Artillery Training*, 1908, p. 209.

the artillery, therefore, that crushed and broke down with its fire the Austrian's moral power of resistance, and thus made it possible for the infantry by virtue of its sheer weight to force its way to victory. The abnormal weakness of the infantry of that period discovered, in fact, a new power in artillery—a power destined to remain and to be developed under more normal conditions.

Similarly, too, at Borodino (April 7, 1812), where the Russian position was but two miles in length, Napoleon concentrated the fire of no less than 400 guns on the redoubts, which formed its *points d'appui*.

"These great artillery masses," Prince Kraft asserts,<sup>1</sup> "decided the result of the battle. . . . Napoleon's enemies were compelled to imitate him, before they could master him." And he goes on to tell how, when Napoleon saw for the first time at Leipzig the Allies massing a great line of batteries against him, he petulantly exclaimed, "At last they have learned something!"

But though the Napoleonic conception of the use of artillery thus opened the eyes of all commanders to a new and fuller appreciation of the hitting powers of that arm, yet it led also to the general adoption of certain methods, which curiously enough some fifty years later, were to limit seriously its full use on the Bohemian battlefields. For under Napoleon, and under his foes and imitators in the campaign of 1813-15, nearly half the batteries of an army were

<sup>1</sup> *Letters on Artillery*, by Prince Kraft Hohenlohe, translated by Major L. N. Walford, R.A., 1887, p. 39.

organized as "reserve artillery," and were kept in hand on the battlefield until the moment for decisive action was believed to have arrived.

Prince Kraft's comments on this, written with a mind full of the recent war experiences of 1866 and 1870, are worth quoting, as, *mutatis mutandis*, they have a bearing on the artillery problems of the present day. He says:<sup>1</sup>

*"The artillery of the Napoleonic wars, which was of but little use at a range exceeding 1000 paces, and which, in order to produce a decisive effect, was obliged to approach to within 300 or 400 paces of the enemy (for example, Senarmont at Friedland), was undoubtedly let out of hand when once it had been sent into action, and it was then impossible to count with any certainty upon the power of employing it anywhere else during the same battle. But our artillery, which can produce good effects at a range at from 2000 to 4000 yards, and which in the ordinary course of the artillery fight need not act at a shorter range, is not let go, but is held fast in the hands of the leader of artillery, even when it has opened fire. He is now in a position to move this artillery to another point, and the artillery is in a condition to carry out his orders, so long as the fight has not yet assumed a decisive character."*

At the opening of the 1866 campaign, although the Prussian army had for the most part been equipped with rifled guns, these truths were not realized. The old organization of the "War of Liberation" was adhered to, and with so little

<sup>1</sup> *Letters on Artillery*, Walford's translation, pp. 60-1.

judgment that the guns rarely came into action sufficiently early and never in sufficient numbers to afford the infantry the support and resistance they had a right to expect. At all the big fights of the war, at Trautenau, at Nachod, at Skalitz, and finally at Königgrätz, these defects in artillery leading were so apparent as to produce, Prince Kraft records, "widespread discontent" in the Prussian army, and to result in a general verdict, that the Prussian artillery had "failed altogether" in the campaign.

But Prince Kraft's explanation of this failure does not wholly clear up its causes. The increase in the range of artillery on the introduction of rifled guns, conferred, it is true, on the batteries increased freedom of tactical action; yet there was another and still more important change in the conditions of combat, and this change was due, in the main, to the enhanced power of the foot-soldier's weapon rather than to that of the guns. The rifle—and still more the breech-loading rifle—had not only made it impossible ever again to carry forward to the assault infantry of inferior morale by the adoption of the Wagram tactics and formations, but by multiplying at least tenfold the distance which attacking infantry must traverse under effective fire to reach the enemy's position, and more than tenfold the time needed to traverse that distance, it had so intensified the moral strain on even the most resolute and best battle-disciplined foot-soldier as to make the early support of artillery an essential to success.<sup>1</sup> "The spirit of the infantry," as

<sup>1</sup> At Gravelotte the withdrawal of the guns of the Eighth Army

Lt.-Colonel G. R. Henderson once put the matter,<sup>1</sup> "depends greatly on the staunchness of the artillery." But the continued assistance of the guns throughout the fight is necessary to infantry for more than moral reasons. The hitting power of a commander who held back his artillery from co-operation with his infantry, would be insufficient to meet a combination against him of the two arms. There are occasions, of course, when of necessity guns withdraw temporarily under cover to avoid being wiped out by superior artillery fire, and thus retain their fighting capacity until the crucial moment; the intensity of artillery fire will, moreover, vary from time to time, but speaking generally the normal conditions of a modern battlefield make it a condition of victory that the tactical co-operation of the two arms—infantry and artillery—should be constant, not intermittent.

The failure of the Prussian artillery in 1866 was in fact due to an ill-timed conservatism which clung to the letter of the Napoleonic system and failed to recognize that under changed tactical conditions the spirit of that system could only be given effect to by new methods. Yet, as in the case of cavalry, this need for new methods would have been appreciated, had the experiences of the Civil war in America been more carefully studied. The artillery officers, it is true, on the Confederate side almost without exception lacked regular military training; on the Federal side Corps caused a panic. At Colombey German batteries with expended ammunition were forbidden to retire, having regard to the morale of the neighbouring troops.

<sup>1</sup> *Stonewall Jackson*, vol. i. p. 159.

## Artillery

they were trained technically, but not tactically. The Confederate artillery was poorly equipped, the Federal somewhat better, though its projectiles and fuses were defective.<sup>1</sup> Moreover, the forests of Virginia, which saw so much of the fighting, seldom allowed room for the deployment of many batteries.

Yet notwithstanding these drawbacks, the armies of Europe had much to learn from the manner in which the keen-brained, resolute American officers handled their guns in the great battles of the Civil war.

Only occasionally, and then chiefly from lack of ammunition or lack of room, were batteries held back from the fight.<sup>2</sup> Moreover, one of the most marked features of the Civil war was the daring manner in which the guns both on attack and defence were thrust forward at the closest range to assist the infantry. The co-operation of the two arms was, it is true, as indeed might have been expected, at first lacking in system and knowledge. But war itself is the best school for war, and the value of concentrated artillery fire on the decisive points was a lesson quickly assimilated. Nor was this all. A careful examination of the great battles of the war will show a flexibility and an originality in the handling of the artillery arm

<sup>1</sup> Both sides were mainly armed with S.B. 12 pounders and 3 inch rifled guns. The former was the favourite weapon, as, though its effective range (1000 yards) was less than that of the 3 inch (1700-2500 yards), it did not suffer from defective ammunition. The fuses of the Confederate rifled guns, in particular, were exceedingly bad.

<sup>2</sup> *E.g.* at Fredericksburg Lee kept back 100 guns for the latter reason.



which mark a development, demanding recognition by students of tactics.

Take, for instance, the battle of Fredericksburg (December 10, 1862). There were of course mistakes. Notably the failure of Burnside to make full use of his superiority in guns (350 to the Confederates' 250), and the neglect of artillery preparation for the attacks on Marye Hill. Yet the passage of his army over the Potomac was covered by massing 143 guns on Stafford Heights; the way was opened for the second attack of Franklin's column on Prospect Hill by a general bombardment to subdue the fire of Jackson's batteries, and the assault was assisted by the close co-operation of the divisional artillery of Meade and Gibbon; the canister of sixteen Federal guns brought subsequently to a standstill the dangerous counter-strokes, with the bayonet, of Early's infantry brigades; finally, on the day following the battle, it was the sight of the inaccessible Federal batteries massed on the Stafford Heights which deterred Lee from attempting by an offensive movement to reap the fruits of victory. Thus even on the beaten side the artillery arm did good service.

On the Confederate side there were two notable artillery features in this fight: first the skill and audacity with which Pelham's two guns of Horse Artillery, though exposed to the fire of six hostile batteries, held up for half an hour the attack of two Federal infantry brigades; and secondly, the reservation of the fire of Jackson's inferior artillery until the decisive moment of the Federal first attack. The

latter's tactics were repeated with marked success by the Federals at Gettysburg. There, on the last day of the battle, Hunt, a regular officer of the United States Artillery, found that his ninety guns would be destroyed if they continued the duel with the 150 Confederate guns massed in preparation for the final effort of Lee's infantry. He determined therefore "to use them for the infantry fight," ceased fire, and withdrew under cover. The Confederate artillery were almost out of ammunition, and accepted with satisfaction this temporary success. They too ceased fire, did not transfer their attention to the enemy's infantry, and, when the great assault commenced, were unable to carry out Lee's instructions to give it close support.<sup>1</sup> Hunt's guns, however, came to life again, and it was the combination of their fire with that of the Federal infantry brigades that crushed and destroyed the magnificent last effort of Pickett's and Pettigrew's divisions.<sup>2</sup>

But if the teaching of the American war was ignored, and perhaps unknown to the Prussian General Staff, the lessons of 1866 were taken fully to heart and bore good fruit in 1870. The term "Reserve Artillery" and all that it implied were utterly swept away. The batteries formerly so organized were assigned to the "Corps Artillery." The guns no longer marched at the tail of the columns, but as near to the head as was compatible with safety. As soon as contact with the

<sup>1</sup> v. *American Historical Review*, vol. xvi. p. 831.

<sup>2</sup> The reader is recommended to study General Sir Ian Hamilton's comments on the temporary withdrawal of an inferior artillery in *A Staff Officer's Scrap Book*, vol. i. pp. 127-30.

enemy was made, as many batteries as possible were brought into action as rapidly as possible, to prepare the way for the infantry, or even to hold, until they arrived, the position from which the infantry attack could be launched. But the gunners did more than this; in the later stages of the fight they never hesitated to give the infantry the most energetic support at the critical moment preceding the actual assault by pushing in at the closest range, regardless of hostile fire, whether of infantry or artillery.

Thus the first fight of the war, Weissenburg, was commenced by the fire of the Bavarian and 5th Corps batteries covering the deployment of their infantry, and terminated by the bombardment of the Chateau of Geisberg and the blowing in of the gates of the town by guns at the closest range. At Woerth, a chance battle brought about by reconnaissance, 108 guns were in action on the eastern heights, as early as 9.30 a.m., before the deployment of the main body of infantry had even commenced. By 1 p.m. 200 guns had come up to assist their infantry comrades. As the fight developed some of these batteries were pushed forward into the actual infantry line of attack against the vineyards on the slopes west of Woerth, while later on—after the capture of the Niederwald—the further advance from the northern edge of the forest, the attack on Elsasshausen, the repulse of the French counter-attack and the attack on Froeschweiler, were all rendered possible by the support of the German guns at very short range. At Spicheren the possession of the Rotheberg was secured by the daring

of two batteries, which climbed its steep slopes and came into action under hot infantry fire on its summit. At Colombey every available gun of Steinmetz' army pushed forward to support the advance-guard, which brought on the action. It was owing to this energetic support that the frontal attack of but five Prussian brigades on five French divisions was carried through without disaster. At Mars la Tour it was the defensive power of the long line of guns (pushed forward ahead of their division with the utmost haste until late in the afternoon they numbered 210), even more than Bredow's charge that enabled Alvensleben's hard-pressed infantry to maintain its position notwithstanding the great numerical superiority of the enemy.<sup>1</sup>

At Gravelotte the artillery tactics of the preceding battles were even more emphasized. Again were the German batteries brought into action at the opening of the fight: again was there the same great concentrations of guns—27 batteries on the right hand firing against Point du Jour, 13 in the centre in action against Amanvilliers, and 30 on the left shelling St. Privat—70 batteries or 420 guns in all. It was true that the mechanism of co-operation between the two arms was not quite perfect. The 9th Corps with over-zeal opened the battle by pushing fifty-four guns far in advance of its infantry to within effective rifle range of the enemy, with the result

<sup>1</sup> Allowance must of course also be made for Bazaine's curious misconception that the Germans were trying to cut him off from Metz (*v. pp. 72-73 supra*).

that one battery was destroyed, and the rest, after two hours' firing, could not continue the struggle. Further north the fault lay with the infantry, the Guards paying a heavy penalty for their premature attack against St. Privat, delivered in close formation without due artillery preparation. Yet both these errors were made good later by the artillery advancing into the very firing line of the infantry in the last phases of the attack on those villages, and fighting inch by inch with their foot comrades.

Again, at Sedan the way to the north was blocked by the pushing forward of the batteries of the 5th and 11th Corps through a defile some miles ahead of the Crown Prince's main body, and ultimately 540 guns, massed in five great groups, closed in gradually on MacMahon's army, and crushed out all power of resistance.

The success of these methods led inevitably to their general adoption. Indeed, a quarter of a century later we find the latest edition of a well-known English tactical treatise dogmatically stating :<sup>1</sup>

*"The incidents of the Franco-German War form the only sound basis on which the structure of artillery tactics can be raised."*

Yet here again, though there is but little to criticize in the tactical methods adopted by the Prussian artillery, the secret of its success is to be found elsewhere than in its tactics. Thus the French General Staff in their admirable narrative of the battle of

<sup>1</sup> *Précis of Modern Tactics*, by Colonel R. Home, A.Q.M.G., revised by Lt.-Colonel S. C. Pratt, 1896 edition, p. 88.

Mars la Tour (Rezonville) point out that the concentration of Prussian guns was numerically outbidden by the French, the latter having at 2 p.m. no less than thirty-nine batteries in action and another eighteen close at hand intact, while the Germans had but twenty-one batteries in all on the spot. The frank comments of the French staff on this are very instructive :

*“ La suprémacie prise par l’artillerie allemande à Rézonville fut loin d’être uniquement due à ses effets destructeurs sur l’artillerie française, lesquels furent très inférieurs—par batterie—à ceux que leur infligea leur adversaire. Seulement, une direction supérieur énergique et toujours guidée par la poursuite d’un but précis ; un commandement tactique et technique convenablement organisé par groupes ; un jeu rationnellement conçu et assez correctement exécuté des réserves en hommes, chevaux et munitions ; et enfin le sentiment, exagéré en fait, de la puissance de son matériel, donnèrent aux batteries prussiennes une capacité de résistance qui les maintient au combat, jusqu’à la chute du jour et leur permit, par conséquent, d’intervenir en masse contre l’adversaire dès que l’occasion s’en présentait. Toutes choses qui, du côté français, se trouvaient exactement renversées.”*<sup>1</sup>

The tactical principles accepted in 1870 remained more or less unimpugned until the outbreak of the Russo-Japanese war, and may perhaps be conveniently summarized under four heads :

(i) As many batteries as possible to be brought

<sup>1</sup> *La Guerre de 1870-1871*, vol. ii. part i. p. 336.

into action at the very outset of a battle, their primary objective being the enemy's guns. "The artillery duel will thus form the beginning of the decisive action" (Prince Kraft). "Any serious artillery action must be opened with a number of guns superior to that of the enemy" (ditto).

- (ii) The batteries to be concentrated in large groups, each group attacking a separate target, under the direct supervision of a senior officer.
- (iii) "The normal, and in most cases, the best position for artillery is that which affords the best view—that is to say, the crest of the heights" (Prince Kraft).
- (iv) As soon as the enemy's guns are silenced, or at least contained, the hostile infantry becomes the objective. In the later stages a portion of the artillery must push forward, regardless of loss, to within close range of the enemy's infantry, and thence support and assist with its fire its own attacking infantry.

The South African campaign was the first test of warfare under the new conditions of smokeless powder and magazine rifles and (but to a limited extent) of quick-firing guns.<sup>1</sup> Moreover, not only had the

<sup>1</sup> The Boers had in all fifteen Q.F. field guns and twenty-two pom-poms at the beginning of the war. The British artillery was still equipped with the fifteen-pr. B.L. guns.

effective range of both guns<sup>1</sup> and rifles been increased by about one-third since 1870, but a new *départure* was made in the employment in the field for the first time<sup>2</sup> of heavy field guns and howitzers, the initiative in this, as well as in the adoption of quick-firing guns, being taken by the Boers.

The value of this heavier and less mobile ordnance was fully established ; but in other respects, owing to the abnormal conditions of the war, and in particular the small number of guns possessed by the Boers, the campaign was not very fruitful in lessons on artillery tactics, though there was some evidence that the methods of 1870 were not immutable for all time. Rarely did the Boer gunners allow themselves to be drawn into an artillery duel, and then only, if mastered, to cease fire and reappear later in another place. The artillery preparations for the attacks on Colenso and Magersfontein, opening as they both did without clearly defined targets, proved useless, indeed more than useless, for they served but to warn the Boers of the impending attack. In more than one engagement, notably in the action of Lombard's Kop, the Boers showed that concentration of artillery fire on a common target could be secured without concentration of the guns in one mass. The incident

<sup>1</sup> The range of the shrapnel of the fifteen-pr. B.L. gun was increased in the fourth month of the war from 4100 to 6500 yards by the issue of a new time fuse. *v. Official History*, vol. i. pp. 421-2.

<sup>2</sup> Fortress guns had, nevertheless, been taken from Belfort in 1870 and used in the fighting on the Lisaine. Field howitzers were added to the field equipment of the Austrian, French, and German armies the year before the South African war.



of Long's batteries at Colenso established that the advance of guns into "the very skirmishing line" of the infantry was still possible, and yet that the augmented volume of fire, range, and accuracy, conferred upon the defence by the modern rifle had increased the risk of such audacity.<sup>1</sup>

On the other hand, the arrest of Cronje's commandos by the fire of Davidson's two horse artillery batteries, "G" and "P,"<sup>2</sup> outdid the achievement of Pelham's guns at Fredericksburg (*v. p. 123 ante*). The bombardment of the Paardeberg laager by forty-four guns and six howitzers repeated, although on a small scale, the artillery tactics of Sedan. The unfortunate results of the cessation of artillery fire during the last stage of the first attack on Hart's Hill (Feb. 23, 1900)<sup>3</sup> made clear to all the infantry's need of artillery assistance up to the very moment of the assault. Special instructions were issued to the battery commanders, with the result that in the successful action of Pieter's Hill, four days later, "the gunners supported the attacking infantry to the very last moment, and the infantry had so thoroughly realized the importance that the ground over which

<sup>1</sup> It is to be observed that it was not the fire of the Boer rifles, but Sir R. Buller's subsequent decision to fall back with his whole force on Chieveley, which entailed the actual loss of the guns. The temporary silencing of guns by infantry fire was in fact no novelty in war—*e.g.* the Amanvilliers incident quoted on p. 127 *supra*, and the "totally shattered" battery at Colombey (*v. German Official Account*, vol. i. p. 315)—nor does such a mishap of itself necessitate the ultimate loss of the guns.

<sup>2</sup> *v. Official History, South African War*, vol. ii. p. 100.

<sup>3</sup> *v. Ibid.* pp. 491-2.

they had to advance should be swept by the artillery, that they were known to grumble if our shells were not constantly bursting in front of them as they moved forward to the attack."<sup>1</sup>

The same principle was too well exemplified by the thorough support given by the 76th and 81st batteries R.F.A. to General Stephenson's brigade in its attack at Driefontein.<sup>2</sup>

<sup>1</sup> v. *Official History, South African War*, vol. ii. pp. 509 and 522.

<sup>2</sup> v. *Ibid.* pp. 220-7. The principle was, in fact, thoroughly accepted by both arms after the opening experiences of the war, notwithstanding the fact that both at Talana and Stormberg our infantry suffered somewhat from the fire of their own guns.

## CHAPTER VII.

### ARTILLERY (CONTINUED).

THE South African war was quickly followed by a campaign which both in the area of its battlefields and the strength of the contending forces overshadows all previous experiences. The development, from the lessons of that tremendous struggle, of the principles now accepted and governing the employment of artillery may perhaps best be traced by quoting those principles from the General Staff's latest treatise on the training of that arm, *Field Artillery Training*, 1912, and comparing them in each case with evidence from the Manchurian battlefields.

The first of these principles is the need for co-ordinating the tactical employment of the artillery arm with the purpose of the Commander of the force to which it belongs.

*“ Knowledge of the general tactical situation and discrimination are essential on the part of all who order artillery movements on the battlefield. Control by higher artillery commanders should be maintained as long as possible, provided the duty of acting on their own initiative, according to the changing circumstances of*

*the fight, is not thereby lost sight of by their subordinates."*<sup>1</sup>

The Japanese artillery tactics were primarily based on the lessons of 1870, but in not a few respects they show definite growth, and most notably in the more deliberate and systematic distribution and employment of batteries in conformity with the supreme Commander's original plan, the circumstances of its gradual development as the fight proceeded from day to day, and the peculiarities of the terrain of the widely extended battlefields.

At Woerth, at Spicheren, at Colombey, and at Mars-la-Tour, though the services rendered by the German artillery were splendid, the batteries were brought up into action in, as it were, a haphazard manner on the initiative of local commanders, and at times in contravention of the original intention of the Headquarters General Staff. However successful these methods proved, and however great the credit attributable to the artillery leaders for their gallantry and never-failing loyal support of the other arms, this reckless system, or rather lack of system, of taking the bit between the teeth and dashing at the enemy without regard to the control of higher authority, might have led to serious consequences, had the conditions of the contest at the outset of the Franco-German war been in other respects more evenly balanced.

In the tactics adopted by the Japanese commanders in the use of their artillery, and, indeed in the employment of all their arms, no haphazard work is

<sup>1</sup> *Field Artillery Training*, section 147 (5).

to be found, but scientific methods and deliberate system.' The gallantry, the splendid determination at all costs to help his comrades, that characterized the German gunner, were equally manifested in the Japanese, but for the latter the control of higher authority never seemed lacking. He was a part of a great machine, and that machine was always under the control of its driver. Take the first battle of the war, the crossing of the Yalu. Excepting Nanshan, this was, it is true, the only occasion on which the Japanese had the advantage of marked superiority in numbers. Yet the passage in face of the enemy of two rivers (the Yalu and the Ai-ho) in several channels, and commanded by positions at least as strong as the Tugela Heights, was a task of no little difficulty; moreover, the soldiers of Japan were crossing bayonets for the first time with the troops of the Czar. The scientific manner in which this intricate tactical problem was examined and solved, presents in all its details a true masterpiece of staff-work, but for the moment we are concerned only with a portion of that work, the employment of the guns.

The first phase of the plan devised by the Japanese General Staff and approved by Kuroki, was, it will be recollected, to throw the 12th and Guards Division across the Yalu above its junction with the Ai-ho and seize the salient which stretched down from the heights on the north-east to the meeting of the two rivers. The 2nd Division meanwhile was to cross to Chakodai Island, immediately facing the right of the Russian position. These preliminary moves being

executed, the second phase of the operation would, it was hoped, see that division and the Guards launched in a frontal attack across the Ai-ho against Zasulich's entrenchments, while the 12th enveloped his left. Of these two phases the first was obviously the most delicate, notwithstanding the fact that a continuance of the enemy's passive attitude was counted on, and that his attention had been distracted by naval feints at the mouth of the Yalu.<sup>1</sup> For the 12th Division, which was to pass over the Yalu on the 29th, the day before the other two divisions moved, would for the moment be isolated in the narrow mountainous wedge between the rivers. As a safeguard against this danger, the Japanese staff relied on the containing power of the concentrated artillery fire. "With a view to assisting the 12th Division in occupying its allotted position on the right of the army,"<sup>2</sup> the whole of the field batteries of the 2nd Division<sup>3</sup> (36 guns and 20 4.7 howitzers) crossed the Yalu on the night of the 29th-30th April to Kintei Island, and there entrenched in emplacements, concealed with the utmost care by screens of trees and drift timber. So well, indeed, were the howitzers hidden, that on this date and on the 1st May not a single Russian shell reached them.<sup>4</sup> This mass of artillery directly faced and menaced Zasulich's right, holding the main

<sup>1</sup> *Official History (Naval and Military), Russo-Japanese War*, vol. i. p. 115.

<sup>2</sup> *Ibid.* p. 118.

<sup>3</sup> The 12th Division was no doubt the unit selected to work through the hills in this and other instances on account of the mountain guns with which its artillery was equipped.

<sup>4</sup> *v. Official History (Naval and Military), Russo-Japanese War*, vol. i.

position, and covering his line of retreat to Feng-huang-ching. Its fire was, therefore, not likely to be disregarded; it would pin down the Russian troops, and thus prevent any serious counter-stroke against the Japanese turning movement. The position of this group of guns and howitzers was not, indeed, intended to be disclosed, unless a good target offered, or unless the enemy opened fire; but the latter excuse being afforded during the forenoon of the 30th, its power was quickly manifested, a Russian battery posted on the opposite heights across the Ai-ho being crushed into silence after half an hour's firing. Thus, covered from counter-attack, the actual crossing-over of the 12th and Guards Division was protected by their own divisional artillery, the guns subsequently following the infantry.

The conduct of the actual battle of 1st May showed throughout the same keen anxiety of the Japanese Staff to support at all times the infantry advance with artillery fire. Indeed, it is open to doubt whether this principle was not observed too closely in the long wait of the Guards and the 2nd Division for their guns to come up<sup>1</sup> after the right bank of the Ai-ho

p. 119; v. also Sir Ian Hamilton's *Staff Officer's Scrap Book*, vol. i. pp. 106-8. Sir Ian, probably by a slip of the pen, gives the number of field guns as 72, for *pace* the *Official History*, the artillery of the adjacent Guards Division was in action some miles further north, partly at Genkado and partly on Kyuri Island.

<sup>1</sup> v. *Official History*, vol. i. p. 128, but Sir Ian Hamilton was, on the other hand, told by a Japanese Staff Officer that the "Guards and the 2nd Division needed rest and refreshment," a plea, however, which the extraordinary endurance displayed by Japanese infantry in later battles (e.g. the 15th Brigade at the Sha-Ho) hardly bears out (v. *Staff Officer's Scrap Book*, vol. i. p. 116).

had been secured, and the enemy had commenced retirement. Yet in the 12th Division Captain Matri-zawa's company (the 3rd of the 26th Regiment) in the ardour of pursuit so outstripped both the divisional guns and the rest of the infantry as to be surrounded at Harnatan by greatly superior numbers, and nearly annihilated before assistance could reach it.<sup>1</sup>

At the battle of Nan-shan the higher direction of the artillery arm was greatly simplified by the narrow frontage of the Russian position—but 2000 yards in all, inclusive of the muddy foreshore on each flank. General Oku had at his disposal two and a half regiments of divisional artillery and three regiments of corps artillery, in all 198 field guns. He received, moreover, notable assistance from the three 10 inch, twelve 4·7 inch, and five 12 pounder guns of the Japanese naval flotilla on his right flank in Chin-chou Bay. This flotilla was in signalling communication with the military Commander-in-Chief, and obeyed his directions as regards its fire. The whole of the field artillery was placed, by the operation orders issued on the previous afternoon, under the command of “the chief artillery officer of the army” and directed to open fire “from positions decided upon by him... and assist the infantry advance.” These arrangements and the somewhat abnormal conditions ensured a thoroughly strenuous and constant artillery support to the attack, and it is to “the

<sup>1</sup> *v. Official History*, vol. i. p. 132, and *From the Yalu to Port Arthur*, by William Maxwell.



boldness" of this support, coupled with the ruthless determination of the Japanese commander and the refusal of the infantry to admit the possibility of failure, that the Committee of Imperial Defence attributes<sup>1</sup> the ultimate success of the attack. Yet it may perhaps be permissible to observe that the actual effect of this great bombardment does not appear to have been great. Indeed, the *Official History* itself points out that the issue might have been different had General Fock, the Russian commander, put his whole strength in the fight and employed in a counter-stroke the four regiments kept all day in reserve.

At Te-li-ssu the manner in which the artillery were told to forward the plan of the army commander is very noticeable. Oku had again under his orders three regiments of corps artillery (13th, 14th, and 15th) in addition to his three divisional regiments (3rd, 4th, and 5th), in all therefore 216 guns. His design was to attack the Russian left with the 3rd Division, to pierce the enemy's centre up the valley of the Fu-shan with the 5th Division, and to envelop his right by a distant turning movement of the 4th Division, which was also charged with the functions of a strategic flank guard.

The ground over which the 3rd Division's advance lay was broken and rugged, so much so that it was not considered possible for that unit to make use of its own artillery. No less than 144 guns (3rd, 5th, 13th, and 15th Artillery Regiments) were therefore

<sup>1</sup> *Official History (Naval and Military)*, vol. i. p. 167.

massed to support the attack on the Russian centre. To the 4th Division was assigned, in addition to its own artillery, the 14th regiment of corps artillery. The reason for diverting the latter unit from the main point of attack is, however, not clear, nor, since the 5th Regiment was equipped with mountain guns, is it evident why some of its batteries could not have assisted the 3rd Division in the difficult task allotted to it, or better still, why the 5th Division, with its mountain artillery, was not placed on the right flank instead of the 3rd. These criticisms, however, apart, there can be no question that the general distribution of Oku's guns in the action was sound, and must be counted amongst the factors which won for him victory.

At Ta-shih-chiao (21st July, 1904) Oku, whether rightly or wrongly does not affect our immediate point, decided to deliver a frontal attack on the ten miles of Russian entrenchments with his whole five divisions advancing on parallel lines. Having so decided, he concentrated his 252 guns (five regiments of divisional artillery and three of corps artillery) into three great groups, a central group of 108 guns, with a group of seventy-two guns on each flank. But for once the Russian Staff made good use of the longer range and more rapid fire of the guns with which their artillery were equipped. The Japanese artillery failed, therefore, to obtain mastery, and Oku's infantry were unable to push home the attack. Yet the resolute boldness of the Japanese plan obtained ultimately its object, for Zarubaiev, with that infirmity of purpose which so

often marked the higher leadership of Russian commanders, threw up the game, and withdrew during the night from the position his troops had so successfully defended.

The seven actions<sup>1</sup> in which the 1st and 4th Japanese Armies fought their way forward through the mountains during the months of June and July to the areas assigned to them for the strategic concentration on Liao-yang, afforded but little opportunity for exemplification of the higher control of the artillery arm on the battlefield, since broken ground and lack of roads necessitated in nearly every case the splitting up of the Japanese divisions into small columns, to each of which had perforce to be assigned a more or less independent rôle, but it is to be noted that each of these columns acted on a common plan, and that cohesion of purpose, mutual co-operation, and unity of action were consistently ensured.

In these combats, and in all the previous battles of the war, the Japanese General Staff had been working up to the consummation of their main design, which took as its two objectives, first the strategic concentration at Liao-yang, by converging lines of advance from the coast, of a force sufficient to attack and defeat the Russian field army under Kuropatkin, and secondly the attainment of complete security for Oyama's over-sea line of communication by the destruction of the fleet which had taken shelter under the guns of Port

<sup>1</sup> Hsiu-yen (6th June), Fen-shui-Ling (26th-27th June), Hsi-sun-cheng (30th-31st July), Mo-tien-Ling (17th July), Chao-tou (19th July), Yan-tzu-Ling and Yu-shu-Ling (31st July).

Arthur. At the battle of Liao-yang (26th August-5th September), therefore, a decisive issue was sought. Materially the results failed to correspond to that expectation, the strength of the Russians preventing such a settlement. Yet its moral harvest justified fully the sacrifices made, and substantially affected the final issue of the war.

That Oyama should have compelled an enemy, superior to his own force in all three arms and not inferior in individual fighting courage, to conform to his will, to abandon a line of elaborately entrenched positions prepared for defence by months of continuous labour, and to fall back with grave loss of prestige towards Mukden, was indeed a triumph of tactical skill and a proof that superiority neither in numbers nor in weapons can avail against superior leadership. The distribution and higher control of the Japanese artillery during this great battle are matters, therefore, of special interest. The artillery at the Japanese Staff's disposal was as shown in table on p. 143.

The eight divisions were organized in three armies, viz.: on the right, the 1st Army under Kuroki, comprising the Guard, 2nd and 12th Divisions; in the centre, the 4th Army under Nodzu, comprising the 5th and 10th Divisions; and on the left, the 2nd Army under Oku, consisting of the 3rd, 4th, and 6th Divisions. The 1st Field Artillery Brigade and all the heavy artillery were thus left for disposal.

The design of the Japanese General Staff was to thrust the enemy from his advanced positions back to

	Field guns.	Heavy artillery, guns, mortars and howitzers.
Eight divisional artillery regiments ( <i>i.e.</i> Guard 2nd, 12th, 3rd, 4th, 5th, 6th, 210th) <sup>1</sup> - -	288	—
Two additional batteries (the Hijikata captured battery and the Kobi Battery, assigned to the Guard Division) - - - -	12	—
Horse artillery of 1st Cavalry Brigade - -	6	—
1st Field Artillery Brigade (13th, 14th, and 15th Regiments) - - - -	108	—
4th Foot Artillery Regiment (eight batteries of 3·5 inch mortars) - - - -	—	32
2nd Independent Brigade, foot artillery (four batteries of 3·5 inch mortars) - - -	—	16
One battery 4·2 inch guns (captured) - -	—	4
One battery 6 inch howitzers (captured) - -	—	4
Totals -	414	56
Grand total (field and heavy) -	470	

Liao-yang and the banks of the Taitzu-Ho, to throw half the 1st Army across that river to the eastward of the Russian line of entrenchments, and so turn their left, and then to push home a combined frontal and flank attack. The plan was simple, yet, having regard to the enemy's superiority in strength and systematic defences, exceedingly bold in its conception. It demanded, therefore, exactness in execution and the closest co-operation between commanders, as well as great exertion and sacrifice from the troops. It

<sup>1</sup> In the Japanese army a regiment of field artillery comprised six 6-gun batteries, except that of the 7th Division, which had four 6-gun batteries, two field and two mountain. The Guard, 1st 2nd, 3rd, 4th, and 6th Divisional Regiments, and the 1st Field Artillery Brigade were equipped with field guns; the remainder of the divisional regiments with mountain guns.

involved, moreover, the extension of the three armies on a battle front of thirty-five miles,<sup>1</sup> and thus necessitated the delegation of full powers of independent action to army and divisional commanders. Yet the maintenance through the contest of the higher control of the Headquarters Staff was essential to success, for inferiority in strength made it impossible to keep back from the attack any considerable reserve, which might re-establish the Commander-in-Chief's plan, if a portion of his force got out of hand or failed to achieve its mission. In the employment of the artillery in particular, special forethought on the part of the Headquarters was necessary, for against the 470 Japanese guns Kuropatkin could bring into action the formidable number of 553 field and sixty horse or mountain artillery guns, besides over a hundred weapons of various types mounted in the Liao-yang defences.<sup>2</sup>

The enemy's entrenchments varied in strength. Two successive lines of field-works covered his whole front, but behind the northern of these, some twelve miles in front of the town, was the principal Liao-yang position, which was something under ten miles in length and surrounded the town with both flanks resting on the Tai-tzu-Ho. This third position formed a great bridge-head protecting the crossing of the Tai-tzu, and defended by a triple line of permanent works.<sup>3</sup> Oyama's plan was, not to invest Liao-yang, not to contain and hold the troops

<sup>1</sup> v. map of situation, 31st August, part iv. *Official History, Russo-Japanese War*.

<sup>2</sup> *Official History, Russo-Japanese War*, part iv. pp. 11-12.

<sup>3</sup> v. *Official History, Russo-Japanese War*, part iv. p. 7.

garrisoning its defences, and endeavour to bring about a comparatively bloodless success by the enveloping movement of Kuroki's army. Any attempt to solve the problem after this fashion would, under the conditions existing, have been not only futile, but disastrous in its consequences. The Japanese Commander-in-Chief selected, therefore, the only sound and possible method, and decided to combine with the envelopment of the enemy's left a direct blow, hit with all his available strength, against the centre and right, and especially against the latter, which, formidable though its tactical defences were, presented strategically the most important target, covering, as it did, the Russian line of communication.

Thus, of the three Japanese armies, it was essential that that on the left—Oku's—should be able to strike the hardest, and of all the weapons of offence at the disposal of a commander to break down and penetrate a strong fortified position, none is so serviceable as his artillery, especially heavy artillery and howitzers and mortars, capable of searching out with high angle fire the cover of the enemy's entrenchments. For these reasons the whole of the extra-divisional artillery at Oyama's disposal, i.e. the 108 field guns of the 1st Artillery Brigade, the four 4.2 inch heavy guns, the forty-eight 3.5 inch mortars, and the four 6 inch howitzers, was assigned to the 2nd Army, and acted under Oku's orders throughout the battle, subject only to the general direction of the Headquarters Staff as to their use. The general distribution of the guns, therefore, was as follows:

Unit.	Field Guns.	Heavy Guns.	Howitzers.	Mortars.	Total.
1st Cavalry Brigade	6	—	—	—	6
2nd Army - -	216	4	4	48	272
4th Army - -	72	—	—	—	72
1st Army - -	120	—	—	—	120
Total -	414	4	4	48	470

It may possibly be urged, that the 272 guns assigned to the 2nd Army actually effected but little, either in the attacks of the Shou-shan-pu position on the 30th and 31st August, or in the attack on Liao-yang on the 2nd September. That is true, but it is not all the truth. The force of the blows then delivered showed no local results, and thus the blows, if regarded as an isolated action, were in a way ineffective, but their true effect must be looked for elsewhere. It was the resolution and strength of the attack against his right that paralyzed Kuropatkin's judgment, and induced that delay in his counter-stroke which lost for him the last chance of victory.

During the ten days' continuous struggle on the Sha-Ho, the comparative inferiority of the Japanese armies in artillery (as, indeed, in the other arms) was even more marked. Oyama had still but 470 guns to bring against Kuropatkin's 760. The situation, however, was at the outset dissimilar from that of the battle of the Liao-yang, Kuropatkin having taken the initiative and organized a special force under Stackelberg, of fifty squadrons, eighty-six battalions, and



194 guns,<sup>1</sup> to seize the mountain passes on which the Japanese eastern flank rested, and from thence roll up Kuroki's army. To the west other special forces, amounting in all to fifty-six squadrons, seventy-six battalions, and 222 guns, were detailed to contain, from entrenched positions, the rest of Oyama's troops. An enormous general reserve of four cavalry corps and three army corps, including 326 guns, was kept in hand in rear of the western wing.<sup>2</sup>

The battlefield, on which this great action was to be fought, had a frontage of over forty-eight miles from east to west. On the eastern side lay rugged broken mountainous country, with few and bad roads. The centre had better communications, but was traversed by spurs and under features running westward or south-westward from the mountains. The western area formed part of a great plain in which the villages and river-beds were tactical features of importance. The Japanese General Staff, as soon as they had divined Kuropatkin's purpose, determined to regain the initiative by vigorous counter-offence. It was planned, therefore, with the Field-Marshal's sanction, that the 12th Division and the Guard Kobi Brigade (Umezawa's) must suffice, with the assistance of the 2nd Cavalry Brigade, to hold the eastern passes and check Stackelberg's enveloping movement, the 2nd, 4th, and the remainder of the 1st Army being ordered meanwhile to attack

<sup>1</sup> Only twenty-two of these were mountain guns.

<sup>2</sup> Patrols amounting in the aggregate to eleven squadrons, seven and a half battalions, and eighteen guns, were also despatched to the extreme eastern and western flanks.

the Russian right wing and endeavour to push it to the north-east, off its line of communications. The audacity of this plan was even greater than that of the previous battle, for, apart from his inferiority in guns, Oyama had in all but forty-three squadrons and 120 battalions to pit against Kuropatkin's 143 squadrons and 258 battalions. On the other hand, the great reduit of permanent works on which Kuropatkin's right had rested at Liao-yang was lacking at the Sha-Ho. This last consideration made it probable that the rôle of mortars and howitzers would not be so important. It appeared also probable that the need of the three armies for artillery support, excepting only the containing force in the mountain passes, would be approximately equal. On the other hand, these forecasts lacked at the commencement of the battle the assured certainty which the actual possession of the initiative afforded to the Japanese Staff at the commencement of the Liao-yang fight. The retention in the Commander-in-Chief's hands of a somewhat larger reserve of strength than at Liao-yang seemed, therefore, necessary at the outset.

Having in view, therefore, their somewhat limited knowledge as to the enemy's actual dispositions, the general plan of action sanctioned by their own Commander-in-Chief, and the terrain of the approaching battle,<sup>1</sup> the Japanese General Staff assigned troops to the various tasks as follows:<sup>2</sup>

<sup>1</sup> Neither Russian nor Japanese Staff had at this time any good map of the country north of Liao-yang, but the Intelligence branch of the latter staff seems to have had fairly good topographical information.

<sup>2</sup> The army organization was, however, retained intact for purposes

	Strength.			
	Squad- rons.	Guns.	Battalions.	
<i>To contain Stackelberg's attack in the east.</i>				
12th Division	12	42 <sup>1</sup>	18	
Umezawa's Brigade				
2nd Cavalry Brigade				
<i>Centre attack against Hill Ridges and Passes.</i>				
1st Army	{	12	186 <sup>2</sup>	54
(Kuroki)				
	{			
4th Army	{	12	186 <sup>2</sup>	54
(Nodzu)				
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of command, the containing force being left throughout the fight under the direct orders of Kuroki.

<sup>1</sup>Thirty-six of these were mountain guns.

<sup>2</sup>Seventy-two of these (*i.e.* 5th, 210th Artillery Regiments) were mountain.

<sup>3</sup>Entirely field artillery, except for howitzers and 4.2 inch guns.

<sup>4</sup>Detached from 4th Division, *v. Official History*, part v. p. 26.

With their dispositions satisfactory progress was made for the first three days of the counter-offensive move (8th-10th October), but on the fourth (the 11th October) a check came. In the Headquarters' operations orders of the previous evening, the 4th Army had been directed to wheel that day half right and push forward for ten miles across the Sha-Ho, acting as a pivot of manœuvre for the 2nd Army on its left. General Nodzu's troops, however, failed to progress. The 5th Division seemed, for some unexplained reason, to have been sticky, and its sister unit—the 10th Division—was not strong enough single-handed to deliver a day frontal attack across the plain against the formidable heights of San-kuai-shi-shan. Thus the intervention of Headquarters became necessary. The 5th Division was ordered to join the reserve, being replaced therefrom by the two Kobi Brigades and the 15th Artillery Regiment, and the 4th Army thus reconstituted was directed to concentrate for a night attack (night 11th-12th) on San-kuai-shi-shan. This concentration left a dangerous gap of over four miles between the left of Nodzu's army and the right division (the 3rd) of Oku's, which had captured that forenoon the village of Yentao-niu-lu, but was in fact destined to lose it again between sunset and the next dawn. This gap was closed by the Field-Marshal's direction in a manner which well illustrates the value of the maintenance of higher control over the artillery of a great force. By retaining at the front the whole of the artillery regiment of the 5th Division,

robbing, the 4th Army of a battalion of the 14th Artillery Regiment, and sending forward the twelve mortar batteries (4th Foot Artillery Regiment and 2nd Independent Foot Artillery), a concentration of eighty-six guns, guarded by an escort of three battalions, three companies of Engineers, and half a squadron under Major-General Yamada, was effected in the gap between the two armies behind and on the hillock near Wu-li-tai-tzu.<sup>1</sup> Thus the gap was closed and the 4th Army left free to carry out successfully its all-important night operations.

Similarly, too, two days later (13th October) the Guards Division having been repulsed in its assault on Chien-shan and for the moment placed in a critical position by the Russian counter-attack from Fei-san-tun,<sup>2</sup> the Commander-in-Chief again intervened and sent forward the 5th Division, accompanied by four mortar batteries, to their assistance.

The higher control of the artillery by the Japanese Army Commanders at both Liao-yang and the Sha-Ho, and their concentration of guns against the targets of special tactical importance, is no less noticeable.

This higher control by both Headquarters Staff and Army Staffs was a good deal facilitated by the fact that the former, and generally too the latter, had at their disposal artillery units additional to and outside the divisional organizations. Nevertheless, the tendency of late years in European armies has been to strengthen the divisional artillery and abolish all

<sup>1</sup> v. p. 38 and footnote p. 49, *Official History*, part v.

<sup>2</sup> v. p. 83, *ibid.*

such extra-divisional artillery units. It would seem possible, however, that the next great war may see the retention of a certain number of divisional artillery brigades under the control of Army or General Headquarters, not, as in 1866, as an unemployed extra reserve, but to permit of a certain adaptation of the guns to the ground, and of the concentration of greater hitting power in the direction demanded by the Commander-in-Chief's plan of action. •

As to this, *Field Artillery Training*, 1912, in dealing with the application of the principle of economy of force to the tactical employment of artillery, prescribes: "*Fire will not be opened with more guns than are necessary for the task in hand. . . . Efforts must be made to foresee the course of the action, and to keep a reserve of fire-power in hand to meet successive requirements as they arise.*"<sup>1</sup>

These instructions apply, no doubt, primarily to the control of artillery fire after being committed to action, but they may also be given a wider interpretation and held to apply to the general battle-field dispositions of an army commander. The essence of all successful tactics is to be stronger than the enemy at the decisive point; in other words, to concentrate tactical power where that power is most needed. The application of this principle to artillery is, as we have seen earlier, no new thing. As to this, *Field Artillery Training*, 1908, observed:<sup>2</sup> "*The*

<sup>1</sup>*Field Artillery Training*, 1912, section 146 (3).

<sup>2</sup>*Field Artillery Training*, 1908, section 80 (1). Compare, too, the 1912 edition of the same manual, section 154 (3).

*improvements in artillery have not lessened the value of concentration as a means of obtaining superiority of fire, but have led to modifications in the manner in which the concentration of fire can be obtained. With shorter ranging guns, and less facility for observation of their fire, it was necessary, in order to obtain complete effect, to mass the guns in the greatest possible strength from the earliest possible moment. The great extent of front occupied by modern armies, both in attack and defence, and considerations as to concealment, may necessitate the dispersion of artillery to a greater degree than was formerly the case. . . . This dispersion is not, however, incompatible with concentration of fire, which, with less perfect guns and appliances, could only be obtained by concentration of guns."*

A remarkable illustration of this new method of concentration of artillery fire by the converging fire of groups of batteries on a common target is to be found in Oku's distribution of his guns in the attack of 31st August, on the Shou-shan-pu position.<sup>1</sup> The fire of no less than thirty-nine field batteries and twelve heavy batteries (234 field guns and forty-eight heavy guns, howitzers and mortars) was directed on the position, but this great line of artillery was stretched out on a front of eight and a half miles in a section, extending from the heights south of San-chia-pu on the south-east to beyond the village of Fu-chia-chuang on the north-west, and formed five more or less distinct groups, with

<sup>1</sup> v. *Official History, Russo-Japanese War*, part iv. pp. 72-3, and map giving situation on 31st August, 1904.

intervals of a mile to one and a half miles between each, viz. :

(i) On heights south of San-chia-pu	<div> 5th Field Artillery Regt.  Half 15th Field Artillery Regiment.  7 batteries of mortars. </div>	<div> 54 field guns.  28 mortars. </div>
(ii) Between villages of Hei-niu-chuang and Tu-tai-tzu	<div> 3rd Field Artillery Regt.  13th Field Artillery Regt. </div>	<div> 72 field guns. </div>
(iii) Astride of railway at Hsi-wan-chuang two miles in rear at Hou-chia-tzu	<div> 14th Field Artillery Regt.  3 batteries mortars.  4 howitzers.  4 4-2 inch guns. </div>	<div> 36 field guns.  12 mortars.  4 howitzers.  4 heavy guns. </div>
(iv) At Po-pu-tzu - -	6th Field Artillery Regt.	36 field guns.
(v) North of Fu-chia-chuang - -	4th Field Artillery Regt.	36 field guns.

The whole of these five groups were ordered to concentrate their fire on the point of assault. Unfortunately, however, the prolonged bombardments of the previous fighting and the delay of the transport, owing to deep mud, had caused a shortage of ammunition. The artillery preparation was not therefore sufficient to secure any marked success for the attack.<sup>1</sup>

The failure of Russian Headquarters, both at Liaoyang and the Sha-Ho, to reap any decisive advantage from their great superiority in artillery has been already hinted at, and is traceable throughout those two prolonged battles. Yet Kuropatkin himself seems to have been aware of the possibilities of the concentration of converging artillery fire, for on 30th August

<sup>1</sup> *v. Official History, Russo-Japanese War*, part iv. pp. 75-6.



the attack of the Japanese 10th Division up the valley of the Tassu brook was broken by the converging fire of three widely separated groups of guns,<sup>1</sup> viz. :

- (i) In the east four batteries, under Colonel Kirchtofovich, concealed in the kaoling on a small plateau just north of Tsao-fan-tun.
- (ii) On the north two batteries in action near Pa-chia-hantan.
- (iii) On the north-west a battery of the 1st Siberian Army Corps in action south of Fang-chia-tun.

The assistance of groups (ii) and (iii) was given, not on the initiative of their own commander or of their immediate superior, but in compliance with the direct personal order of the Russian Commander-in-Chief.

But it is perhaps from the battle of the Sha-ho that the clearest lessons can be learnt of the value of concentrated artillery fire. Those ten days' continuous fighting present a series of desperate struggles for tactical localities, for the passes on the east, for the spurs and ridges traversing the centre of the battle terrain, for the villages, dongas and small kopjes on the western plain. The passes, it is true, afforded comparatively little scope for the artillery arm. The success of their splendid defence by Umezawa's reservists and the 12th Division must be attributed to the stubborn courage and devotion of the Japanese infantry and to the lack of unity and cohesion in the attack of Stackelberg's columns. But in the centre

<sup>1</sup> v. *Official History, Russo-Japanese War*, part iv. pp. 60-1.

and on the west the guns played an important rôle. Each locality was successively prepared for the infantry attack by the Japanese Staff directing a concentration on it of artillery fire; and the success of the attack, when delivered by day, was found in a great measure to depend on the efficacy of this preparation and on the closeness of the artillery support in its final stage.

Mere bombardment, however, by itself effected but little; the shelling of the San-kuai-shan heights all day (11th October) by the 4th Army so little shook the defence that four Russian battalions the following night only gave way to fifteen Japanese battalions after a strenuous resistance with the bayonet.<sup>1</sup> Yet to the westward on the same day, where Colonel Stakhovich's detachments in the advanced posts of Yang-chia-wan and Hsiao-yu-chung-pu held up for the moment the leading brigade of the 6th Japanese Division, the commander of the army cleared the way by concentrating on the two villages the fire of 144 of the 152 guns at his disposal.<sup>2</sup>

On the following day (12th October) the task was assigned to the 3rd and 6th Japanese Divisions of capturing six villages—Wu-li-chieh, Lung-Wang-miao, Yen-tao-niu-lu, Lang-tzu-tai, Hsiao-tung-tai and Erh-shih-chia-tzu—on the banks of the Shih-li-ho between the railway and the junction of that stream with the Sha-ho. These villages, lying in a cluster in the open flat plain and connected with each other by the covered

<sup>1</sup> *v. Official History, Russo-Japanese War*, part v. p. 38.

<sup>2</sup> *v. Ibid.* part v. p. 42.

way of the bed of the Shih-li-ho, were held by the Russian 17th Army Corps and presented a compact frontage of some three miles to an enemy advancing from the south. Their capture by a day attack was not an easy task. The artillery arrangements for the attack form a particularly good example of the higher control of that arm. The three eastern villages—Wu-li-chieh, Lung-Wang-miao, and Yen-tao-niu-lu—were named as the objectives of the 3rd Division, the battalions of whose leading brigade had been summarily evicted from the last village by a Russian attack during the previous night (11th–12th October), and had entrenched themselves in the hamlet of Nan-kuan-tzu and along a line running 1000 yards to the westward. The remainder of the division with its commander lay at Shuang-tzai-tzu,<sup>1</sup> some three miles to the west of the Wu-li-tai-tzu Hill, on which the eighty-six guns under Yamada had been concentrated by Headquarters on the previous evening (*v. p. 151 supra*). The group of the three western villages—Erh-shih-chia-tzu, Hsiao-tung-tai and Lang-tzu-tai—was the objective of the 6th Division, whose leading battalions<sup>2</sup> had with that purpose in view pushed during the night from Yang-chia-wan up the river bed of the Sha-ho, and, notwithstanding a hot fire from the garrison of Erh-shih-chia-tzu, dug themselves in within 500 and 600 yards of that village and Lang-tzu-tai. From these advanced entrenchments the 6th Division was instructed to commence the attack, the 3rd Division

<sup>1</sup> *v. Official History, Russo-Japanese War*, part v. p. 60.

<sup>2</sup> *v. Ibid.* p. 56.

moving in echelon on its right to the assault of the eastern group of villages. For the artillery support of the western or left attack 72 guns (6th and 13th Field Artillery Regiments) were massed near Yang-chia-wan. For the support of the centre attack the 3rd Field Artillery Regiment, the battery of howitzers and the 4.2 inch heavy guns were added to Yamada's artillery group on the Wu-li-tai-tzu Hill,<sup>1</sup> thus augmenting that artillery concentration to a total of 130 guns, howitzers, and mortars. It is true that a portion of this great central group of guns was employed in keeping quiet the Russian 10th Army Corps to the north and north-east and later on in supporting the subsequent attacks of part of the 3rd Division and of Yamada's infantry on the villages of Shih-li-ho and Hung-chia-chuang.<sup>2</sup> Yet the main design of the higher authorities' distribution of these 202 guns in two groups, five miles apart, was the support by converging fire of the infantry attack of the two divisions on the three miles' frontage of the six villages.

The design amply justified itself. Notwithstanding the great general superiority of Kuropatkin in guns, Oyama's staff secured by their skilful arrangements a decisive local artillery superiority at what was for the moment the decisive tactical point. The Russian

<sup>1</sup> v. *Official History, Russo-Japanese War*, part v. p. 60. As the howitzers and 4.2 inch guns as well as the whole of the Yamada detachment were under the direction of the Field-Marshal, it may be presumed, although it is not so stated in our official narrative, that the concentration was initiated by the Headquarters Staff.

<sup>2</sup> v. *Ibid.* part v. pp. 61, 65.

artillery was mastered, and, thanks to this mastering, the Japanese infantry, closely supported by the fire of their guns, was able to storm the villages one by one, and inflict a disastrous blow on the army corps holding them.

These examples will serve sufficiently to illustrate the principles of the higher control of artillery, and the methods of securing the concentration of artillery fire under the conditions of modern war. The questions of concealed positions, of the balance of advantage between direct and indirect fire, of the use of rapid fire, of the advantage effected by shields, and of the manner in which guns can best give the close support needed by infantry in the final stages of the attack remain to be touched on.

We have seen (*v. p. 129*) that in 1870 the Germans habitually brought their guns into action on the actual crest or front slope of a position. The South African war gave some indication of the advantages of guns being protected. At Magersfontein "G" Battery, Royal Horse Artillery, fired all day from the rear slope of Horse Artillery Hill, and only lost four men, although within rifle shot of the Boers.<sup>1</sup> At Ladysmith the obsolete 6·3 inch howitzers concealed in a little kloof between Wagon Hill and Caesar's Camp forced "Long Tom" to vacate a position decisively commanding the town and its eastern and southern defences.<sup>2</sup> Throughout the war one of the great difficulties experienced by our artillery officers was to locate

<sup>1</sup> *v. Official History, South African War*, vol. i. p. 322.

<sup>2</sup> *v. Ibid.* vol. ii. p. 545.

the cunningly hidden Boer guns. *Field Artillery Training*, 1908, stated that:<sup>1</sup>

"Concealed positions may be divided into those which, where concealment cannot be maintained after fire is opened, and those where concealment is expected to be permanent. Concealment cannot be looked for after fire is opened in those positions where the guns are run up to the crest so that they may lie directly over the sights, where the cover is insufficient to completely hide their flashes or dust thrown up by their blasts."

Excepting the howitzer incident at Ladysmith, it is probable that most of the instances quoted from the South African war fall short of permanent concealment as above defined. But it is not easy to determine from the necessarily condensed narratives of official histories the cases where the conditions of this definition were completely fulfilled. It must suffice, therefore, to illustrate historically the general principles of concealment in a broad sense, without attempting to judge too closely the class in which the examples quoted actually fall.

The principles are laid down in the last revise of the *Training Manual* as follows :

"*Concealed manoeuvre favours surprise, and should therefore be sought for up to the moment of opening fire, due regard being had to tactical requirements. . . . Concealment in action increases the difficulties of the*

<sup>1</sup> *v. Field Artillery Training*, 1908, section 52, and *Modern Artillery in the Field*, by Colonel H. A. Bethell, pp. 275-7. In the last issue of the manual (1912) the two classes of concealed positions are defined as "covered" and "semi-covered," section 190 (7) to (8).

*hostile batteries, possibly even to the extent of conferring immunity from their fire, thus enabling the concealed artillery to devote its attention to the support and assistance of its own infantry. The more extended use of air craft may, however, modify the advantage of concealment to some extent. The power of delivering effective fire from such positions is, moreover, limited. Rapid movement or very fleeting opportunities are difficult to deal with. Distant observing stations, involving the passage of orders by mechanical means, increase the difficulty. The amount of dead ground which can be left in front of the guns may also be a matter of serious concern."*<sup>1</sup>

The successful concealment of Japanese guns at the battle of the Yalu has been already narrated. At that fight, and again at Telissu, the Russians learnt a lesson which bore fruit at Ta-shih-chiao. There, on the Russian right, the 2nd and 3rd batteries, 9th Siberian Regiment, were so well concealed by rising ground and the millet crops that they withstood for nine and a half hours the concentrated fire of twelve Japanese batteries, and succeeded in checking the advance of infantry of the Japanese 6th Division.<sup>2</sup>

*"Elsewhere<sup>3</sup> on the battlefield the same tactics could not be pursued, for to the east the broken nature of the ground enabled the attacking column to approach under cover comparatively close to the Russian position. On this side, therefore, the Russians had to resort to direct*

<sup>1</sup> v. *Field Artillery Training*, 1912, section 147.

<sup>2</sup> v. *Official History (Naval and Military), Russo-Japanese War*, p. 207.

<sup>3</sup> v. *Ibid.* p. 426.

*laying. Yet the superior range and greater rapidity of fire of the fifty-six guns (thirty-two quick-firing) they had to oppose seventy-two Japanese (thirty-six mountain and thirty-six field) gained the mastery, and the attack of the 3rd and 5th Divisions failed."*

Again, the failure of the attack delivered by the Guards Division against the 3rd Siberian Corps on the first day of the battle of Liao-yang (26th August) was due in a considerable measure to insufficient artillery support. Yet the Guards brought eight batteries into action against four Russian, but three of the latter were so admirably concealed in the low ground near Kao-fen-ssu that the Japanese could not touch them with effective fire, and the Russian guns were free to concentrate on the attacking infantry whenever they offered a target.<sup>1</sup> On the other hand, the attack of the 2nd Japanese Division the same day on the Kung-chang Ling was much assisted by the oblique fire of two Japanese guns directed on the Russian trenches at a range of 1800 yards, the guns being cleverly hidden in the kaoling crops in the valley near Hsia-hsi-kou.<sup>2</sup>

In the first attack of the 2nd Army on the Shou-shan-pu position (28th August) 180 Japanese guns actually came into action, the heavy ground delaying the development on that day of Oku's full artillery strength. The positions of all these 180 guns, although hidden by the kaoling, could be detected from hill 693 or by the observation party in the Russian

<sup>1</sup> *v. Official History, Russo-Japanese War*, part iv. pp. 20-3.

<sup>2</sup> *v. Ibid.* p. 25, and map of situation, 26th-28th August, 1904.



balloon. On the Russian side the map of our *Official History* for that date shows only twelve batteries (i.e. ninety-six guns) in action in General Stackelberg's section of defence, but the text tells us that this artillery was "so well hidden that neither by day nor by night could the flash of a gun be seen."<sup>1</sup> The Japanese attack failed on this occasion, no doubt mainly on account of the great strength of the Shou-shan-pu position, yet its repulse was much facilitated by the concealment of the Russian batteries, a concealment which, as at Ta-shih-chiao, enabled them to disregard the superior hostile artillery fire, and concentrate their whole attention on the attacking infantry. Indeed, even the great concentration of the fire of 338 guns, which was effected on the following day (v. p. 153), did not achieve any direct substantial successes. Stackelberg's withdrawal the following night was due to other reasons.

It was the fire of two concealed guns which enabled Stakhovich's small detachment of five squadrons, a battalion and an artillery section to stay the advance of the Japanese 11th Brigade all the forenoon of the 11th October, although the brigade was assisted by no less than six batteries.<sup>2</sup> We have already noticed (v. p. 156) that this delay was so little acceptable to the Japanese staff that the army commander himself had to intervene, and to sweep aside Stakhovich's little force by a concentration of almost the whole of the guns of the 2nd Army, thus

<sup>1</sup> v. *Official History, Russo-Japanese War*, part iv. p. 62.

<sup>2</sup> v. *Ibid.* part v. p. 42.

affording, perhaps, the most striking proof in the Manchurian War of the singular power of concealed artillery. The achievement of Colonel Salomko's detachment of a battery and three battalions at Wu-li-tai-tzu on the previous day may, however, also be quoted with advantage. This solitary battery, although in action against six Japanese batteries, could not be, for a long time, located. It attracted, we are told, "the whole of the hostile artillery fire upon the unoccupied crest of the hill and away from the infantry on the slopes,"<sup>1</sup> and although the fire of the Japanese batteries did ultimately succeed in forcing the Russian gunners to quit their guns for a time, yet Salomko's defence arrangements were so skilful that his weak brigade held up for twenty-four hours the advance of the 5th Division.

It will be observed, however, that almost the whole of the examples quoted above to illustrate the value of concealed guns are instances of artillery acting in a defensive rôle. Even on the Yalu the main purpose of the concealed batteries on Kin-tei Island was to contain the Russian right and centre, and so cover the Japanese divisions while crossing the river. Permanent concealment of guns necessitates indirect laying; and indirect laying, however skilful the artillery personnel, must always be a slower process than direct, and, as the *Training Manual* points out, cannot make the same use of rapid fire against fleeting targets. Even in the defence, therefore, there are limitations in the use of artillery

<sup>1</sup> v. *Official History, Russo-Japanese War*, part v. p. 24.

concealment. As to this, the *Training Manual* orders that in the third phase of the defence: "If the attacking infantry is successful in reaching a position from which it is possible to threaten an assault, no effort must be spared to increase the effect of the fire defence. If a forward movement to a direct fire position is likely to contribute to this object, it must be undertaken without hesitation."<sup>1</sup> The *Manual* particularly applies to this situation the general principle that "Concealment both as regards position and manœuvre must invariably be foregone for adequate reasons. To support infantry and to enable it to effect its purpose, the artillery must willingly sacrifice itself." (Section 147 (4).)

A fine example of this close support of infantry acting on the defensive was given by a Russian battery commander in the battle of Liao-yang during the attack of the 2nd Japanese Guards Brigade on the high ground west of Ya-yu-chi on 30th August. "Seeing that the infantry defence was in danger of being broken," the officer commanding the 3-9th Artillery Brigade "left his covered position and from the crest of height 1030 poured in a heavy fire into the advancing enemy at a range of little more than 400 yards."<sup>2</sup> Similarly too, on the same day, during the defence of the heights south and west of Tsao-fan-tun against the 10th Japanese Division, to cover the withdrawal of the 3-23rd East Siberian Rifle Regi-

<sup>1</sup> *v. Field Artillery Training*, 1912, section 159.

<sup>2</sup> *Official History, Russo-Japanese War*, part iv. p. 58, and map giving situation, 29th-30th August.

ment, which was being overwhelmed in an advanced post, the "3rd battery of the 6th Artillery Brigade came into action in the open within 600 yards of the enemy, *and there remained for the rest of the day*, although at the end only one gun could be served."<sup>1</sup>

In the attack, except in cramped enclosed country, it will not, as a rule, be necessary that the guns should push into such extremely close range as did these Russian batteries in defence of their comrades. The 1870 practice of thrusting guns into the very skirmishing line is no longer possible in normal country, for the battery horses would be shot down before the line was reached, and, even if reached, sufficient gunners to serve the guns could not survive the deadly stream of close rifle fire more than a few minutes. Moreover, the accuracy of the modern field gun is as good at 2500-3000 yards range as at 500 yards. Yet advance from the long range concealed position will, as a rule, be essential. The *Training Manual* tells us that:

*"During the progress of the fight it will usually be necessary for the artillery to move forward to positions from which it will have a clearer view of the infantry fight, and thus be able to afford to the infantry more effective support, especially against local counter-attacks. For this forward movement to be carried out with success and to attain its object certain conditions are necessary, namely:*

*"(i) A line of advance that is either protected from fire or over which the guns can move deployed and at*

<sup>1</sup> v. *Official History, Russo-Japanese War*, part iv. p. 60.

*speed, so as to avoid the risk of columns of guns and wagons being brought to a standstill under fire.*

“(ii) *The possibility of reasonable protection from fire during deployment and up to the moment of opening fire.*

“*These conditions may be found to obtain for small forces of artillery such as sections or single guns, when they do not obtain for a large number of batteries moving simultaneously. In such cases guns should be dribbled forward as few at a time as may be found practicable. The advancing batteries should, when necessary, be supported by the fire of those in action. In cases of extreme difficulty it may be necessary for the forward movement to take place under cover of darkness.*”<sup>1</sup>

The value of close artillery support in the final stages of the infantry advance characterizes every daylight attack of the Manchurian war.

The concluding scene of the 3rd and 6th Divisions' attack on the group of villages on the 12th October, the artillery concentration for which has been already touched on (v. p. 156) is a typical example. Read, for instance, what our *Official History* says about the final assault on Shih-li-ho, a fine illustration of the co-operation of the two arms:<sup>2</sup>

“*That important village was still held only by the 2nd, 3rd and 4th battalions of the 11th (Tsakov) Regiment, but the 8th battery of the 35th Artillery Brigade had been sent to join the 3rd battery of the 6th Artillery Brigade. For a time these two batteries bore almost the whole weight of the hostile artillery fire, but so soon*

<sup>1</sup> *Field Artillery Training*, 1912, section 154 (4).

<sup>2</sup> *Official History, Russo-Japanese War*, part v. p. 84.

as the actual advance began the Japanese guns directed their entire attention on to the infantry. The ground in front of the Russian trenches for more than 1000 yards was perfectly open, and, but for the help of the artillery fire, the infantry would have been simply swept away by rifle fire. So long as the artillery only was in action, the Russians were secure in their trenches, but the moment they were forced to show themselves in their efforts to beat off the infantry attack they suffered heavily from the Japanese shrapnel. One company of the Japanese 34th Regiment made its way across the railway bridge and took the defences in flank, while the 3rd battalion of the 6th Regiment and 1st and 3rd battalions of the 34th Regiment (less the single company already mentioned) carried out the frontal attack. By the time the first-named battalion had got within 200 yards of the defence, it had lost 220 of its officers and men ; but nothing could withstand this perfectly methodical attack, which was carried through with ruthless determination. Until 3.30 p.m. the Russians stood their ground, but the sudden appearance of the company of the 34th on the north bank of the river decided the fight. A battery which had been most gallantly served and had inflicted much loss upon the attack was taken in flank and many of its horses killed. Then the men began to leave their trenches, and in a few minutes all was over. The artillery bombardment was kept up until the last possible moment, and for a time the village was enveloped in a cloud of dust thrown up by bullets and by smoke from bursting shell. At the first sign that the defence was beginning to waver the infantry dashed in to the assault.'

In this fight it will be observed the Japanese guns closely observed the rule of selecting as their target the objective most important for the moment, first the artillery, then the infantry. The domination of the former made the mastery of the latter easy. At Ta-shih-chiao (24th July, 1904) the converse had been the case. The Japanese batteries there engaged, nevertheless, made a gallant effort to complete their mission, and pushing forward to closer range came into action in the open. But there their mobility was lost, the gun-teams could not again approach them, and the attack failed.<sup>1</sup>

At Chao-tou (19th July, 1904), however, the superiority of the Russian guns was overcome by the adoption of the night advance of artillery suggested in our own regulations. The 6th Division had only mountain guns, but its six batteries during the previous night pushed forward and entrenched themselves in two well-concealed positions, from which, at 5 a.m., fire was opened against the thirty-two field and seven mountain guns opposing them; the fight at first progressed slowly, the 14th Regiment having to execute a difficult march of eighteen miles to carry out an enveloping movement against the Russian right, but at 2.30 p.m. several of the Russian guns withdrew from the main positions, and half an hour later the brigade detailed for the frontal attack, having deployed along a sunken lane, "half of the Japanese batteries moved forward to a fresh position nearer to the Russian trenches, on which a heavy fire

<sup>1</sup> *Official History (Naval and Military)*, vol. i. p. 426.

was soon directed."<sup>1</sup> The flank pressure was by now, too, making itself felt, and the Russian troops gradually vacated their trenches and fell back before the Japanese advance.

The fight at Chao-tou does not, however, wholly illustrate the difficulties of guns pushing forward under the fire of an active defence; for the concealed positions of the artillery were taken up at the commencement of the battle, and the second and closer positions of the three Japanese batteries, which subsequently moved forward, lay apparently in the open, and were not reached until the Russian retirement had commenced, under the influence of the flanking movement of the 14th Regiment. With an enterprising defence but little shaken, the problem of how to push in the attacking batteries to a conveniently close range for the final stage of the attack is one of the most difficult presented by modern war. An advance by night is one of the possible solutions, yet its adoption will require great care. Even for the defence it is no easy matter to entrench batteries at night in suitable sites. The Russians attempted it in preparing the villages of Erhshih-tai-tzu, Lang-tzu-tai, and Hsia-tung-tai on the night of 11th-12th October against the attack of the 6th Japanese Division. But next morning their eighty-eight guns found themselves in emplacements so badly sited that by 8.30 a.m. Okabo's seventy-two guns had gained the mastery.<sup>2</sup>

<sup>1</sup> *Official History (Naval and Military)*, vol. i. p. 268.

<sup>2</sup> *v. Official History*, part v. p. 56.



The difficulties of this method in the attack are obviously accentuated. Oshima, it is true, after the failure of the Guards Division to carry, on the 26th August, the heights south of Kao-feng-ssu, "took advantage of the darkness to shift his batteries to fresh positions, where they would be better able to cope with the hostile artillery, and to render more efficient support to the infantry, if it should be necessary to attack again in the morning."<sup>1</sup> But as the 3rd Siberian Army, which held the position, was ordered by Russian Headquarters to fall back that night, the value of these new artillery positions could not be tested. Four days later, however (30th August), this method was tried by the 1st Brigade of Guards in its attack on Cheng-chia-fang and failed. The Brigadier—Asada—had four batteries at his disposal. These he pushed forward during the previous night to a position a little west of Hsu-chia-kou. But this position was found, when fire was opened at dawn, to be plainly visible from the observation post of the Russian artillery commander, and the Japanese guns were "completely dominated"<sup>2</sup> by four concealed Russian batteries. The Japanese infantry thus missed the support of the sister arm, and never got within a thousand yards of the position.

It may therefore be concluded that essential though the support of the guns is to the attacking infantry, there is no royal method in which that difficult task can be carried out by the artillery commander. What the infantry soldier needs is accurate artillery fire to

<sup>1</sup> *v. Official History*, part iv. p. 23.

<sup>2</sup> *v. Ibid.* p. 56.

keep down the heads of the hostile infantry until the trenches can be reached with the bayonet. The proximity or otherwise of his own guns is immaterial to the attacking foot soldier, provided their fire is accurate and maintained up to the last moment before the assault. It is no encouragement to the infantry soldier to see his own guns silenced alongside him and their personnel destroyed. What, therefore, is required of the artillery commander is not to accompany the infantry with his guns, but with the fire of his guns. In the British service it is left to the commander to decide, having regard to the circumstances of the moment, how best this can be done. "The shielded gun with the shielded wagon beside it constitute an armoured emplacement in which the gunner is comparatively safe from infantry fire down to a range of 500 yards."<sup>1</sup> But even so, the personnel of the battery remains exposed to oblique fire, the difficulty of reaching so advanced a position will be very great, and once there the gun can never again be moved until night sets in or the enemy's position is carried. Moreover, if the target can be seen at a longer range, the gun is almost as efficient at 3000 yards as at 500. Yet the artillery must shrink from no sacrifice, however great, to make certain of co-operation at the decisive moment.

The great essential in the employment of artillery is, therefore, accuracy of fire, and to this, in the British service, supreme importance is attached, both in training batteries to fire slowly and deliberately

<sup>1</sup> *v. Modern Artillery in the Field*, by Colonel H. A. Bethell, p. 280.

from concealed positions by indirect laying at long ranges, and in more rapid fire by direct laying at decisive ranges. The French rely on somewhat different tactics. They mistrust the elaborate arrangements of concealed positions and long-range fire, and favour the opening of artillery fire behind the crest line at decisive ranges. If a definite target does not offer, they hope to shake the enemy by sweeping with a storm of shrapnel the areas in which his presence is suspected.<sup>1</sup> The experience of the Manchurian campaign does not, however, favour such views. Sufficient examples have already been cited to prove the value of concealed positions. As regards the hope of making areas untenable by strewing them with shrapnel bullets, it will suffice to say that this method was given a full trial by the Russian artillery and was found ineffective. It is on record that during the battle of Mukden a Russian battery took one particular area as its target for a whole day without doing any damage other than killing an orderly's horse. Difficult and indeed at times impossible though it is on the modern battlefield to locate the enemy's position with any certainty, the searching process

<sup>1</sup>The French also differ from English and German methods in detailing specifically one-third of their batteries to support the infantry attack and the other two-thirds as counter-batteries, to "neutralise" the hostile artillery. The points involved in this divergence are fully discussed in *Modern Artillery in the Field*, by Colonel H. A. Bethell, pp. 290-1. The author of the admirable article on "The French Field Artillery" in the *Army Review*, April, 1912, holds, however, that "the French methods do not differ very materially from our own," and that the French gunner does not seek "to plaster a whole parish with projectiles."

entails an expenditure of ammunition which can seldom be justified. It is prescribed, therefore, in the British service that "to justify the opening of fire there must be a definite tactical object, and a reasonable probability of attaining it."<sup>1</sup>

The ammunition question is, moreover, the governing factor in the employment of modern artillery's power in rapid fire.

*"Quick-firing field guns confer on artillery commanders a reserve of power which should be kept in hand; and the fullest powers of the gun should be retained for a critical moment, or till an unexpected opportunity arises. When it is borne in mind that guns can be fired at such a rate as to exhaust the whole of the ammunition taken into the field with an army in less than an hour, it is hardly necessary to point out the grave responsibility resting on those who allow ammunition to be wasted."*<sup>2</sup>

The number of rounds provided in the field per gun of the British Expeditionary Force are set forth on page 5 of *War Establishments*, part i. 1913. It will be observed that the 18-pounder Q.F. has in all 528 rounds carried for it with the battery and in the brigade and divisional ammunition columns and in the ammunition park. At Lamuntun, during the battle of the Sha-Ho, forty-eight Russian guns actually fired away 8000 rounds in forty minutes,

<sup>1</sup> *v. Field Artillery Training*, 1912, section 146 (4). The French, however, use the "rafale" on all obscure targets or on targets whose exact range it is difficult to determine. *v. Army Review*, vol. ii. pp. 315-16.

<sup>2</sup> *Field Artillery Training*, 1908, section 80.

thus expending with but doubtful results<sup>1</sup> nearly one-third of the entire number of rounds carried in our service with field units for that number of guns.<sup>2</sup> Two hours' firing at a similar rate would leave British field batteries absolutely destitute of ammunition. The danger suggested in the regulations is therefore no imaginary one, and its gravity is enhanced by the prolonged duration of modern battles. Nor can battery or brigade commanders be absolutely certain of the whole of the 528 rounds per gun being available when needed. The replenishing of their empty wagons from the divisional ammunition columns may be delayed by bad roads, as it was during Oku's second attack on the Shou-shan-pu position<sup>3</sup> (31st August, 1904), or the divisional ammunition columns and even the ammunition park may be exhausted and not yet replenished from the lines of communication, as would seem to have been the case in the final attempt of the Russians (on 2nd September, 1904) to recapture Manju Yama.<sup>4</sup> In both those combats the shortage of gun ammunition prejudiced the chances of the attacking side. At Nan-shan, too, where both Japanese and Russians found in the afternoon that they almost completely ran out of ammunition, the attack would not have

<sup>1</sup> *Official History, Russo-Japanese War*, part v. p. 112.

<sup>2</sup> A reserve of 472 rounds per gun is also maintained on the lines of communications. De Négrier states that at Ta-shih-chiao on 23rd July, the Russian battery actually fired 501 rounds per gun. *v. Lessons of the Russo-Japanese War*, p. 53.

<sup>3</sup> *Official History, Russo-Japanese War*, part iv. p. 75.

<sup>4</sup> *Ibid.* p. 98.

succeeded had the Russian commander used his reserves. Yet these shortages do not seem actually due to rapid fire. A report on artillery tactics in the Manchurian campaign, quoted by General de Négrier, states specifically that :

*“Rapid fire was only used on the rarest occasions, the reason of its disuse being the difficulty of replenishing the ammunition.”*<sup>1</sup>

For an army operating across the seas the need for special care against waste of gun ammunition is apparent, when it is considered that one hour's rapid firing would expend the whole of the ammunition with field units, and a single repetition of such a period would exhaust every round (of the guns so firing) remaining in the theatre of war. The artillery commander, therefore, who resorts to rapid fire without adequate reason, may have occasion later to regret bitterly his prodigality.

#### HOWITZERS—MOUNTAIN ARTILLERY AND HEAVY ARTILLERY.

The special rôle of the different types of artillery used normally in the field are set forth clearly in *Field Service Regulations*, section 4, sub-paras. 4-8. The great development of entrenchments in modern war, both in attack and defence, has made the addition to a field army of howitzers and heavy artillery absolutely essential. The tasks assigned to the 2nd Japanese Army in the battle of Liao-yang and to the 2nd, 4th and 1st armies in the battle of Mukden

<sup>1</sup> v. *Lessons on the Russo-Japanese War*, Spiers' translation, p 45.

presented almost the same difficulties as the attack of a fortress, and would have been impossible without the aid of high-angled fire and heavy artillery; indeed, at Mukden, siege guns too were found requisite. Even in the attack of troops holding an elaborately prepared position, the shrapnel of field guns, although invaluable in keeping down the rifle fire of the defenders and so covering the advance of the attack, can do but little material damage. The thin mud walls of the Manchurian villages, but 20 to 28 inches, and penetrable, when not frozen, by the rifle at 900 yards range,<sup>1</sup> seem to have sufficed to give protection against shrapnel. The Russian shrapnel, the *Official History* records, "burst all round the village" of Fu-chu-yao, under cover of which the 3rd Japanese Brigade was assembled on the 12th October, 1904, for the attack of a ridge to the eastward; yet the brigade lost but very few men from this fire.<sup>2</sup> It was a wise decision therefore that gave to the 3rd and 6th Divisions the assistance of howitzers and mortars in their attack that same day on the villages clustering round the banks of the Shih-li-ho (*v. p. 167*), for the high explosive shells of the modern howitzer break up and destroy cover of this type, and indeed all ordinary buildings and walls as well as parapets and head-cover, and would render untenable the villages, which in parts of the open places of the continent of Europe have so often in the past been used as tactical *points d'appui*. The great shell power of heavy artillery gives it, too, special value for such work, while its

<sup>1</sup> *Official History*, part v. p. 10.

<sup>2</sup> *Ibid.* p. 71.

very long range enables it to bring oblique fire on almost any point of the enemy's position. His shielded artillery can thus be effectually knocked out, his entrenchments raked, and the assault supported at the last moment by converging fire. The inclusion of a howitzer brigade and a heavy battery in the artillery of a British Division will thus enable the Divisional Commander to break down with this fire the material as well as moral opposition to his advance.

Though not strictly speaking a field operation, yet it is perhaps relevant to recall the fact that the fire of howitzers finally secured for Japan sea command by destroying the Russian fleet in Port Arthur harbour, and that to win that supreme advantage, General Nogi sacrificed 12,000 men in the capture of 203 Metre Hill for use as an observation post.<sup>1</sup>

The adjustment of the equipment as well as of the organization, of a national army to the circumstances of probable theatres of war is a basic principle of national war organization. The topography of Manchuria obviously dictated the equipment of six of Japan's divisions with mountain guns. The distribution and employment of these guns up to the battle of the Sha-ho has been already illustrated by various examples. The advantage of superior mobility, which they afforded in working over broken ground and in the attack and defence of mountain passes, was, however, to a considerable degree counter-

<sup>1</sup> *Official History*, part iii. pp. 91, 98, 99.



balanced by their inferiority in shell power and range. The experiences of this campaign have therefore tended to confirm the belief that under normal conditions the field gun is the better weapon for divisional artillery. Except in India mountain artillery was abolished in the British service after the South African war, and is not included in our expeditionary force. Yet the *Field Service Regulations* point out that :

*"In level country it may be moved with comparatively little exposure owing to the facility with which it can take advantage of cover. It can therefore be used in support of infantry at shorter range than either horse or field artillery."*<sup>1</sup>

The *Field Artillery Training Manual* expresses this point even more strongly :

*"The use of mountain artillery is not restricted to mountainous country. Infantry require effective support throughout the attack. . . . Hills, woods, and broken or enclosed country, which might be impassable to wheeled artillery, present little difficulties to pack animals, and, as cover which will conceal a man standing upright is sufficient for them also, batteries of mountain artillery will often be able to work their way forward on a battlefield without attracting attention, where the movement of wheeled artillery could not escape detection."*<sup>2</sup>

These observations of the General Staff would seem to apply with some force to many of the enclosed and

<sup>1</sup> *Field Service Regulations*, section 4 (7).

<sup>2</sup> *Field Artillery Training*, section 145.

well-wooded counties of England, and it is perhaps for consideration whether a few mountain batteries might not be valuable for Home Defence, even though their introduction necessitated a proportionate reduction of the Territorial Field Artillery.

## CHAPTER VIII.

### ENGINEERS.

THE higher and more systematic training of staff and regimental officers has tended during the last two or three decades to relieve the Royal Engineers of a portion of the responsibilities formerly resting upon them in the field. The selection and strengthening of a position and the provision of artificial cover, in attack as well as in defence, are matters, which it is now fully recognized, must be governed by and co-ordinated with the fighting plan of the responsible tactical leader. The Engineer may and will be called upon to give his technical advice and assistance as to details, but the responsibility of decision, and in the main of execution, rests with the General Staff, commanding officers, and the troops. Even the improvement of our own communications by bridging and road-making, or the interruption of the enemy's by the destruction of his bridges, railways, and roads are duties which, in their simpler forms, the troops now share with the Engineers, though as to these the latter (subject to the direction of the General Staff) bear the heavier portion of the burden, and alone

possess the technical knowledge needed for extensive and complicated tasks.

But though modern military developments have thus in some ways eased the responsibilities of the Engineers, in others those responsibilities have been greatly increased. The vital importance of railways and telegraphic communications to the large armies now placed in the field, the great elaboration of field fortifications, whenever time permits, the value of search lights to detect the night attacks now so frequent a feature in modern battles, the influence on the tactical and strategical conduct of war, which aeroplanes and airships will exercise in all future wars, the proof afforded by the last great campaign that permanent fortification and the attack and defence of fortresses are by no means arts and studies to be relegated to the dust heap, and finally the recognition of the fatal consequences to an army in the field of contaminated water supplies, all these make the present day responsibilities of the Royal Engineers weightier than they have ever been and render the efficiency of that corps a vital matter for the army at large.

Efficiency would obviously be unattainable in these many and divers duties without special organization; the corps of the Royal Engineers is therefore now organized as shown in Table on p. 183.

The duties of Royal Engineer field troops are to assist the mounted troops, especially the trained cavalry pioneers, in the passage of rivers (for which purpose they carry light collapsible boats), in the

Units.	How allotted in war.
I. Field Troops - - -	Cavalry Divisional Troops. (One for each Brigade.)
II. Field Companies - - -	Divisional Troops. (Two for each Division.)
III. Signal Squadrons and Signal Troops - - -	One Squadron for the Cavalry Division. One Troop for Cavalry or Mounted Brigades.
IV. Signal Companies - - -	Infantry Division.
V. Air-line Signal Companies -	Army Troops.
VI. Cable Signal Companies -	
VII. Wireless Signal Companies -	
VIII. Bridging Train - - -	
IX. Printing Section - - -	
X. Line of Communication Signal Companies - - -	Lines of Communication.
XI. Railway Companies - - -	To Naval Bases and defended posts.
XII. Fortress Companies - - -	
XIII. Siege Companies - - -	To Field Army, when required for siege operations.
XIV. Survey Company or Section	Army Troops, as needed.
XV. Work Company - - -	Lines of Communication.

hasty repair or improvement of bridges, roads, and other means of communication, in the interruption of the enemy's communications by the destruction of bridges, railways, and telegraphs, in the tapping of telegraph wires or their temporary repair, in placing localities in a state of defence, and in the preparation and maintenance of watering and camp arrangements.<sup>1</sup> To facilitate the execution of these, each field troop is allowed five pack animals to carry a portion of its tools and material; for the remainder of its equipment light vehicles are provided.

<sup>1</sup> *v. Field Service Regulations, 1912, part i. section 5 (1) and (2).*

The value to the mounted arm of such technical assistance hardly needs demonstration. The very term "independent cavalry" implies a self-sustained force, sufficient in all ways in itself to accomplish its mission. In its strategic duties the Cavalry Division must be independent of external aid. Its own resources, supplemented only by those of the country it traverses, must suffice for all purposes. Yet this truism was not formerly recognized. In 1870 the German cavalry during their advance across the Moselle were a good deal hampered in cutting the French railways by lack of equipment for that kind of work and lack of technical knowledge. The success, for instance, of a raid made by a squadron of the 17th Hussars on the line near Frouard was due mainly to one Dorkhorn, "the sacristan" of the 6th German Cavalry Division, who, having been a railway official in civil life, was by good luck unearthed as an expert, and lent to the squadron to blow up the enemy's line.<sup>1</sup>

At the commencement of the South African war only one Field Troop of two sections was sent out from England for employment with the Cavalry Division. But, as the mounted forces increased, it was found essential to improvise further assistance for them in technical duties. The original troop was expanded, and additional troops and mounted detachments were formed from sappers of other field units (e.g. the Ladysmith Balloon Section), Colonial units,

<sup>1</sup> *v. Cavalry on Service*, by General v. Pelet-Narbonne, Major Legard's translation, pp. 213 and 238.

and mounted infantry. In the last phase of the war efforts were made to provide every mounted column with at least one Engineer officer and a few men. Such assistance, if not actually indispensable, was at any rate of great value, not so much in aggression against the enemy's communications, as in assisting the advance of our own troops by the improvement of roads, drifts, etc., for transport, and of water-supplies. Yet Major Hunter-Weston, with a small detachment of No. 3 Field Troop and some cavalry pioneers, broke the line north of Bloemfontein the night before Lord Roberts' occupation of the Free State capital and so secured from the enemy rolling stock of great value to the army.<sup>1</sup> In the following month the line was similarly blown up north of Kroonstadt, but without material result. Later again the railway and wires were cut near Roodepoort and near Elandsfontein, but an attempt to destroy the Delagoa Bay line failed.

The Boers on the other hand were extraordinarily successful both in the deliberate demolition of the railway bridges and lines in their retirement northward and subsequently eastward, and in raids to break the line in our rear, such as De Wet's on Rhenoster River in June, 1900. The main part of this demolition was carried out under the supervision of European trained men of the Transvaal railway staff.

*"Though the spectacle of some of the larger broken bridges presented to our own railway engineers was*

<sup>1</sup> v. *Official History, South African War*, vol. ii. pp. 235-7.

*sufficiently disheartening, there is no doubt that the Boers, had they possessed the knowledge, could have rendered the damage done more complete. This applies not only to the bridge demolition, but also to the efforts made to damage the permanent way, in which they paid more attention to the open line, which could easily be repaired, than to the points and crossings which could not."*<sup>1</sup>

Again the personnel for Lieut.-Colonel Nagamuna's famous raid on the railway line north of Mukden in the Russo-Japanese war (January-March, 1905), was entirely composed of officers and men picked from four cavalry regiments.<sup>2</sup> Neither Japan nor Russia appears to have grasped the value of attaching engineers to the mounted arm; yet had tactical conditions permitted any prolonged interruption of the single line of railway upon which Kuropatkin's armies depended for maintenance, the issue of the whole campaign would have been affected. The study in fact of all recent wars emphasizes the importance of technical assistance to cavalry, and this not only in its strategic mission and when raiding but on other occasions, since cavalry is not so well able as the other arms to spare the time and men needed to place localities in a state of defence, and yet when employed on screening and protective duties, or when used to assist the advanced guard to hold a position, covering the deployment of the main army, or, if the occasion should unfortunately arise, when engaged in covering a retreat, the aid of obstacles and artificial cover will be much

<sup>1</sup> v. *Times' History of South African War*, vol. vi. p. 326.

<sup>2</sup> v. *British Officers' Reports, Russo-Japanese War*, vol. ii. p. 68.



needed to augment the containing power of the comparatively limited number of rifles which a cavalry regiment can utilize against an enemy.

*“Engineer field companies form part of a division; they are not so mobile as engineer field troops. . . . Their duties include the construction of works of defence, the improvement and, in some cases, construction of roadways and bridges, and the preparation and maintenance of watering arrangements. Although the other arms are responsible for the construction of their own works of defence, yet it is necessary that field engineers should be available to assist in this, and also to execute any special engineering work which may have to be undertaken, such as improving communications, destroying obstacles, and strengthening captured localities.”*<sup>1</sup>

The capacity of the two field companies allotted to each division is not perhaps so fully known to infantry and artillery officers as might be desirable. It may therefore be convenient to state briefly the organization and equipment of these units.

The War establishment of a field company comprises 6 Officers, 215 N.C.O.'s and men, excluding attached details (58 mounted branch, 157 dismounted), 76 horses and 14 vehicles. The vehicles consist of:

8 tool carts.	1 trestle wagon.
4 forage carts.	1 water cart.
1 G.S. wagon.	1 cart for cooks.
2 pontoon wagons.	

All these are 1st line transport.

<sup>1</sup> *Field Service Regulations*, 1912, part i. section 5 (2) and (3).

The company is organized in four sections and a headquarters. To the latter are attached the G.S., pontoon and trestle wagons. Each section is commanded by a subaltern officer, and has with it two tool carts, a pack horse and one forage cart. The tool carts contain *inter alia* entrenching and carpenter's tools, explosives and water supply stores. The pack cob carries explosives and tools needed for demolition. Each section is thus complete in itself. The G.S. wagon with headquarters carries, in addition to other requisites, sketching and signalling equipment. The bridging equipment consists of two pontoons and two Weldon trestles. It will suffice to construct 60 feet of medium bridge, or two trestle piers and a raft of two pontoons. But since the bridging trains allotted as army troops carry only material, the officers and men of the divisional field companies are now responsible for the construction and maintenance of all pontoon bridges, whether the material used is their own or that of the train.<sup>1</sup> The two field companies carry together sufficient water gear for the whole division. They are besides sufficiently equipped to undertake all small engineering operations, such as demolitions, local repairs to roads, bridges, and railways, and the construction of field works, blockhouses, etc.; for any more extensive work the companies would obtain tools and material either by local requisition or from the ordnance depôt at the advanced base.

<sup>1</sup> Each bridging train—there are two allotted as army troops—carries sufficient material for 200 yards of medium bridge.

The most vital of the many important services rendered by the Royal Engineers to the army in the South African war were :

- (i) The repair and maintenance of the railways north of the Tugela and the Orange River.
- (ii) The improvement and maintenance of water supplies.
- (iii) The erection of the blockhouse system.

The railway reconstruction and maintenance work excelled any achievement of that description previously recorded in history. From Norval's Pont and Bethulie Bridge in Cape Colony to Pietersburg in the northern Transvaal, from Colenso in Natal to Elandsfontein, from Pretoria to Koomati Poort, from the Orange River to Mafeking almost every bridge and culvert had been destroyed. Telegraphs, stations, water supply and permanent way were in many places wrecked, the rolling stock carried off, yet

*“As the army advanced step by step from one big break to another, railhead followed never far behind, and eleven days after the army reached Johannesburg and sixteen days after it reached Pretoria communication to these places from the south was opened.”*<sup>1</sup>

The constant supply of full rations, which Sir R. Buller's army enjoyed in its advance from Natal, was due mainly to the fact, that, except for a four days' delay caused by the blocking in of Laing's Nek tunnel, the railway was reopened *pari passu* with each day's march, the culverts being repaired and deviations

<sup>1</sup> *v. Times' History of South African War*, vol. vi. p. 318.

made when necessary, not by trained railway sappers but by an ordinary field company Royal Engineers.

From an engineering point of view the most important of all this great work was the repair of the two great railway bridges over the Orange River at Norval's Pont and Bethulie. At Norval's Pont three spans—each of 136 feet—had been destroyed; at Bethulie five spans were down. Fortunately the possibility of the destruction of these bridges had been foreseen by the Intelligence Department before the war, and material provided for their repair. Yet this repair was no easy matter, especially as the needs of the troops could not await its accomplishment. The repair of that at Norval's Pont affords:

*“ A peculiarly interesting example of the successive stages in the crossing of a river in war. About March 10, while the Boers were still holding the north bank, an Engineer officer swam across to reconnoitre. On March 15 the covering infantry were ferried over in single pontoons, and on the same day the pontoon bridge was constructed and the force marched across. On the 19th a flying bridge, consisting of a large ‘ pont ’ travelling along a wire cable, was rigged up near the broken railway bridge to take stores across from rail to rail, for thanks to our raid north of Bloemfontein,<sup>1</sup> trains were running from Norval's Pont to that place. On the 25th an overhead ‘ aerial train ’ supported on wire cables and hauled by steam, was conveying supplies from rail to rail at the rate of six tons per hour; and on the 27th this was supplanted by a low level deviation*

<sup>1</sup> *v. Times' History of South African War*, vol. vi. p. 318.

*bridge across which entire trains ran. By May 20 the high level bridge was repaired and traffic passed over as before the war."*

This great work of reconstruction was carried out by two special field Engineers' sections (organized early in the war from the 8th, 31st, 10th, 26th and 42nd companies, a number of refugees, employees of the Free State railway, and some 300 natives) and the Railway Pioneer Regiment, a corps raised specially for that purpose from British artisans employed at Johannesburg before the war.<sup>2</sup> But other field troops and companies R.E. bore their share in it from time to time. Thus the largest floating bridge made during the war, the pontoon at Norval's Pont—some 266 yards in length—was constructed by C Troop and other details.

At Potgieter's drift, at Vaalkrantz, and for the final crossing of the Tugela, which relieved Ladysmith, the Royal Engineers rendered notable service in laying pontoon bridges for the use of the troops engaged in those operations. The repair of the Colenso bridge under the fire of the Boer guns afforded very substantial assistance to Sir Redvers Buller at a critical time. The Tugela and the Orange River once crossed, however, the bridging battalion found little opportunity for its special work and was employed on ordinary Engineer duties.<sup>3</sup> As a result of this experience the bridging train, carrying material but not providing working personnel, has been substituted in the army

<sup>1</sup> *v. Times' History of South African War*, vol. vi. p. 341.

<sup>2</sup> *v. Ibid.* pp. 310-311.

<sup>3</sup> *v. Ibid.* p. 342.

for the old bridging companies. On the other hand, the assistance of the R.E. in the improvement of drifts over rivers and sluits was throughout the war essential to the free movement of the British columns.

In 1899 British War Establishments allowed but one field company R.E. to each division. The divisional organization was not long maintained, but, as the war continued, the need for increased R.E. personnel for the many engineering services made itself felt, and during the campaign over 10,000 Regular, Militia, and Volunteer Royal Engineers of all ranks were sent out from England, 8500 of these being Regulars. The Railway Pioneer Corps, originally 1000 strong, was expanded later to four battalions. A corps of civilian pioneers was also recruited in Natal, and a native labour corps.

The value of skilled tradesmen in the regular R.E. field companies was, however, especially emphasized during the war. As an instance it may be recorded that many of the ambulances of the Natal Field Army at one time broke down under the strain of the rough field roads, but were so effectively repaired by the R.E. as to last till the end of the campaign. The R.E., moreover, improvised brakes for the naval gun carriages, which greatly facilitated the advance of the naval guns. The South African war proved very thoroughly the importance of the training of officers and men R.E., being such as to render them not only specialists in particular classes of work, but also efficient generally in all engineering duties.

The progress of the Russo-Japanese war showed similarly a steadily increasing demand for Engineer units. Japan started at an advantage. Each of its divisions—thirteen in number at the commencement of the war—included an Engineer battalion, 750 strong, organized in three companies. Besides these there were twelve Kobi companies and one Kobi Engineer battalion. During the war, to meet the increase of the number of divisions to seventeen, four additional Engineer battalions and five additional Kobi Engineer companies were organized, thus making an aggregate of seventy-one Engineer companies, that is, one for each infantry brigade (whether Regular or Kobi).

Russia, on the other hand, had at the outset but one Engineer company for each division, and one, as corps troops, for each army corps;<sup>1</sup> but this establishment was found insufficient for active service requirements, and early in 1905 five new sapper battalions were sent out to the theatre of war.

But though field fortifications played a more prominent part in this campaign than in any previous war, on the Russian side not only was there a shortage at first of field engineers, but both staff and troops were out of touch with those in the field. The higher commanders were untrained in the employment of these sappers, and the infantry uninstructed in the art of entrenchment.<sup>2</sup> In the earlier battles, therefore,

<sup>1</sup> *v. Official History (Naval and Military) Russo-Japanese War*, vol. i. p. 21.

<sup>2</sup> *v. Kriegstechnische Zeitschrift*, February, 1910.

the Russian defences were clumsy and conspicuous, affording but little protection, while no attempt was made to conceal freshly-turned earth. From Nan-shan onwards there was distinct improvement. The works were better adapted to the surrounding ground and well concealed. The semi-permanent works of the great positions at Liao-yang, at Mukden, and finally at Hsipansai and Kunchuling were well constructed, and seem to have served their intended purpose, for their main defect—that they were planned with a view to passive defence and not to counter-attack—does not appear to be inconsistent with the attitude of the Commander-in-Chief's mind before and during the great battles that ensued. On the Japanese side the relations between field engineers and the troops were inspired with that spirit of selflessness, of mutual understanding, and mutual confidence, which permeated the whole Japanese army. In the attack the spade was used systematically for offensive purpose. In the defence, as during the long halt on the Sha-Ho, the field entrenchments of Oyama's armies were systematically planned and constructed with a view to the resumption of the offensive, as soon as strategical conditions permitted. Throughout the campaign the engineers' work conformed to the plan of the General Staff, the spade was the servant and not the master of the rifle and the gun.

In the Japanese army the bridging section of each divisional Engineer battalion carried material for a bridge 153 yards in length. The Russian pontoon battalion had the material to construct a bridge,



varying in length from 233 yards, if siege artillery had to be carried, to 400 yards for the other arms. The first and second companies of each Engineer battalion had also material for a light bridge of about twenty-four yards, but this latter equipment was found useless for Manchurian rivers.

Probably the most notable bridging feat of the war was the construction of the Japanese bridges across the Ya-lu, notable not only because it is a fine example of a difficult tactical operation admirably carried through by the combination of accurate and methodical staff work with technical thoroughness in execution, but also because, though the total bridge building capacity of the 1st Army's three Engineer battalions was limited, as regards the pontoons they carried, to 459 yards, bridges of an aggregate length of no less than 1630 yards were constructed, the difference being made up by material obtained locally or brought from the landing-place at Rikaho.<sup>1</sup> The accurate timing of these bridging operations, the skilful concealment of the Commander-in-Chief's designs, and the perfect smoothness with which his plan was carried through forms a model of the manner in which engineers can co-operate with the staff and the three arms.

The Russian retreat from Liao-yang showed the difficulty of saving bridging equipment, when an army falls back from a large river. The permanent wooden bridges and the superstructure of the railway bridge

<sup>1</sup> *v. Official History (Naval and Military) Russo-Japanese War*, vol. i. p. 114.

were of course burnt. But the pontoon companies with their heavy equipment were found very awkward units to be mixed up with a rearguard. Horses, moreover, were scarce and the roads execrable. An attempt was made to get along the wagons by double-spanning for some five kilometres and then sending teams back to bring up the remainder. Finally eighteen wagons with equipment, two tool wagons and a forge wagon had to be burnt.<sup>1</sup>

It will have been gathered from this brief sketch of the work done by Field Engineers in recent war that their duties in the field tend to increase in volume and importance rather than to diminish.<sup>2</sup> On the march their main duty is to make possible the advance of the force to which they belong, but more especially the movement of its heavy artillery, 2nd line, and mechanical transport. The portion of the field company with the advanced guard should for this purpose carry out a special Engineer reconnaissance, obtain information of obstructions to the advance of the columns in rear, and transmit to the main body early and accurate reports of the time and labour required to deal with these obstacles, and of the position and nature of the water supplies on the road. The advanced guard R.E. detachment itself will only carry out absolutely necessary work—the heavier work being left to the Engineers with the main body. For this purpose a considerable portion of the field

<sup>1</sup> *v. Rivista di Artiglieria e Genio*, December, 1907.

<sup>2</sup> In the Japanese army the number of Field Engineers in a division has been increased since the Russo-Japanese war from 750 to 1000.

companies must be placed in a forward position in the column, and, if bridging be probable, must have with them the bridging gear. In a retreat it is the Field Engineers' "double duty to clear away obstacles from the path of their own army and to close every avenue of communication to the enemy on the rear and flanks."<sup>1</sup> In the attack the Field Engineers will assist by opening up communication and removing obstacles, and will consolidate the hold of troops on ground even by assisting in its entrenchment.<sup>2</sup> (*Field Service Regulations*, section 106 (9).) In night attacks they will be at hand to remove wire entanglements, shelters, etc., with which the enemy may have covered his front. Whenever positions are artificially strengthened, whether for defence or offence, the Field Engineers will supplement the tools of the troops, supply skilled labour for special work, advise on all technical points, especially as to the types of works most suitable to the requirements of the situation, and co-ordinate generally, thus ensuring economy in time, labour, and material.

Both on the march and when halted the Field Engineers of a force take charge of all water supplies, safeguard them from pollution, and adapt them for the use of the troops. If a force be billeted, the Field Engineers will assist in adapting billets to its requirements; if halted for a prolonged period, where

<sup>1</sup> *v. Field Engineering for our next War*, by Captain E. E. B. Wilson, D.S.O., R.E. The summary of the Field Engineer's duties is derived mainly from the same article.

<sup>2</sup> *e.g.* In the final attack on the western flank of the Boers' laager at Paardeberg.

billets are not available, they will assist and advise the troops in the provision of temporary huts or other shelters; on outpost duty they will improve communications and advise and assist in strengthening artificially detached posts on the line of resistance. Generally speaking it is the function of the Field Engineer in all situations to assist by means of his technical knowledge and technical equipment the troops to adapt the physical conditions and material resources of the country (other than supplies) to the mission assigned to them.

#### SIGNAL SQUADRONS, TROOPS, AND COMPANIES.

These will be dealt with in another chapter.

#### SEARCH-LIGHTS.

In the earlier stages of the South African war search-lights figured mainly in connection with entrenched localities. At Kimberley and Mafeking they did good service for the defence. At Ladysmith no search-lights were available for the garrison. Two with the Boers were utilized only defensively, to search the zone between the investing and defensive lines at night with a view to the detection of night attacks. Two search-lights also accompanied the Natal Field Force and were similarly used in the operations round Colenso. In the later stages of the war search-lights were fixed to all armoured trains, and a service of mobile search-lights, drawn

by motor transport or animals, was improvised in connection with the blockhouse lines. The value of the lights in all these various services seems to have been more moral than actual :

*"If a party of burghers wandering across the veld were suddenly caught in a beam, even at such a range that it was quite impossible for those anywhere near the projector to see them, they at once imagined that because they were plainly visible to each other, they must be equally visible to the enemy."*<sup>1</sup>

Search-lights in this way certainly tend to delay and embarrass night reconnaissance.

In the Russo-Japanese war their most notable employment was again defensive at Port-Arthur, where the Russians had six established on the sea front and six on the land front. In the next great campaign it would seem probable, however, that the use of search-lights in the field will develop with an increased recourse to night operations. The following general principles have been suggested for their employment :

*"(a) On the defence :*

- (i) To light with concentrated beams defiles across which the attackers must pass so that they may be fired on with effect by the guns of the defence at ranges up to 3500 yards.*
- (ii) To light up the attacking infantry with dispersed beams when advancing to the assault at ranges within 1000 yards.*

<sup>1</sup> *c. Times' History of South African War*, vol. vi. p. 347.

(b) *In the attack :*

- (i) *To prevent the defence from improving their entrenchments and obstacles under cover of darkness.*
- (ii) *To light up definite artillery targets such as redoubts.*
- (iii) *To assist the attacking columns by lighting up rough ground with different lights so that the rate of advance in the initial stages of the attack may be as rapid as by day.*
- (iv) *To help the attacking columns to keep direction by lighting with concentrated beams that part of the defender's line selected for assault.*
- (v) *To assist in repelling the counter-attack. . . . A company of six lights can, as a rule, cover the frontage of two brigades in the firing line."*<sup>1</sup>

It may, however, be permissible to remark that in this estimate the distances at which search-lights will enable artillery and infantry fire to be used effectively in the defence at night would seem to be assessed somewhat optimistically, while in the attack it is obvious that the extensive use of search-lights in the manner suggested under headings (ii) (iii) and (iv) would entirely destroy any chance of surprising the enemy. In the night attack on San-kuai-shih-Shan, it is true, there was little attempt at surprise, the signal for the advance of the five brigades employed being given by setting fire to a heap of kaoling at

<sup>1</sup> v. Article on "General Principles of Organization and Equipment of Royal Engineers," *R.E. Journal*, February, 1910, p. 88.

divisional headquarters.<sup>1</sup> Surprise, nevertheless, is one of the most important factors in the success of such operations, and is clearly aimed at in all the instructions regarding such missions given in Chapter X. of the *Field Service Regulations*.

<sup>1</sup> *v. Official History, Russo-Japanese War*, part v. p. 67.

## CHAPTER IX.

### INFANTRY. •

"The essence of infantry tactics consists in breaking down the enemy's resistance by the weight and direction of its fire, and then completing his overthrow by assault."—*Field Service Regulations*, part i. section 6 (2).

AMIDST all the changes in the art of war which science and national organization have produced, infantry, though not without some interruption, has retained its supremacy as the dominant arm on the battlefield. The Persian light horse inflicted disaster on the Roman legions at Cannae, yet it was the matchless battle discipline of Rome's infantry which won and so long retained for her empire. The armour, lance, and the heavy sword of the feudal knight secured for a time a force irresistible to the inferior weapons of the half-naked, half-starved, and undisciplined footmen of that epoch; but the fire action of the English archers at Crecy, Poitiers, and Agincourt restored the tactical balance of power. Gustavus Adolphus in the seventeenth century, Frederick the Great in the eighteenth, Napoleon at the beginning of the nineteenth, became each in turn the great commander of his age by mastering the art of handling infantry on the field of



battle.\* Yet Napoleon, the greatest of them all, was finally defeated by Wellington, "the mere infantry General",<sup>1</sup> his incomparable foot-soldiers.

The hundred years which separate us from Napoleon's time, or rather the latter half of that century, have produced notable developments in war, developments which have greatly increased the difficulty of the infantry's duties on the field of battle—yet these changes have served but to accentuate its position as the dominant arm. However important may be the strategic screening and protective duties of cavalry, however essential the support of the guns, the structural framework of the modern combat rests, not as the German regulations suggest, on the artillery,<sup>1</sup> but on the task assigned to the foot-soldiers, for both in attack and defence the main burden of the fight lies ever upon the infantry. To that arm is given the honour of enduring the severest and longest strain on its moral and physical energies, from it the heaviest sacrifice of life is demanded, upon its courage and efficiency depends mainly the supreme issue of victory or defeat. The auxiliary arms, the best trained staff, the most gifted commander, can effect nothing of themselves without infantry, fitted and willing to undertake these responsibilities and carry them selflessly through to the end. The splendour, the glitter, the showy side of war remain, it is true, with the other arms. Nor is that all they can claim. No one values the assistance of the other arms more than the

<sup>1</sup> *Drill Regulations for the Field Artillery of the German Army*, para. 368.

infantry soldier. Yet if the laurel wreath is to reward sweat of blood, the casualty lists of every fight of recent times assign to the infantry that imperishable honour.

The changes in the tactical conditions which the last fifty years have seen are due to the great development of the fire power of all three arms. Yet this development has left with the infantry, as with the cavalry, the dual power of shock action and fire action. In their use, however, there is a divergence between the two arms. The cavalry commander has to make a choice, as a rule, between the rifle and the charge, and but rarely will be able to supplement the one with the other. For infantry shock action, the final assault of the enemy's position with the bayonet is the natural sequence, the culminating achievement of fire action. It may not always materialize, even in a successful attack. It may indeed often happen that the enemy will suffer too much in the fire fight to await the clash of the bayonet. But the ideal of the final decisive charge must be ever in the mind of the attacking infantry, to sustain them in enduring the punishing losses of the passage of the fire-swept zone, to draw them on to victory. "The arme blanche principle is," as a Japanese infantry officer rightly declares, "the spirit of attack."<sup>1</sup> Similarly, too, on the defensive, the hope of victory lies not in a mere stubborn clinging to entrenchments, but in the counter-attack, and the vigour with which

<sup>1</sup> *v.* An essay by Captain T. Seki, Japanese Infantry, on "The Value of the Arme Blanche," *R. U.S.J.*, vol. lv. p. 1150.

that counter-attack is delivered is dependent on the presence in the mind of the defending infantry of a fixed resolve to drive back the enemy at the point of the bayonet.

Shock action is therefore still the ideal culmination of all infantry tactics. The Manchurian campaign has wiped out the mistaken inference from South African experiences that bayonet fighting belonged to the past, and made clear that that ideal may even in day fighting become the actual. Yet changes in fighting conditions have profoundly modified the proportionate influence on the fight claimable respectively by bullet and bayonet. It may be of interest to trace briefly the gradual swing of the pendulum between those two forces.

Frederick the Great, following in the footsteps of Gustavus Adolphus, sought victory by superiority in manœuvre, in rapid fire, and in shock action at the decisive point. His skill in manœuvre was due to the greater mobility of his infantry, as compared with that of the Austrian and French. Having marched in column round the flank, selected as his main objective, he deployed his battalions into line at an oblique angle to the enemy's front, poured in a rapid fire, and pushed home with the bayonet. The battle of Leuthen (5th December, 1757), the classic example of these tactical methods, was pronounced by Napoleon to be "a masterpiece of movement, manœuvre, and resolution."<sup>1</sup> That verdict indeed strikes the keynote of Frederick's success. His victories were due not to

<sup>1</sup> *v. Précis of Modern Tactics*, Home, revised by Pratt, 1896, pp. 231-3.

the discovery of any mechanical solution of the problems of war, but to the better training of his troops and that quickness of perception which enabled him to take advantage of his enemy's deficiencies. At Rossbach, a month before Leuthen, the Franco-Austrian army had attempted to defeat Frederick by imitating pedantically his new method of attack, but lack of battle discipline and lack of tactical perception doomed the attempt to disastrous failure.

The essence of the Prussian King's methods was, in fact, the combination of fire development with a mobility which enabled the attack to strike quickly and hard at the decisive point. These principles were a little later adopted and further developed in the French army. Mesnil Durand, their French exponent, recognizing that infantry has two distinct weapons, fire action and shock action, concluded<sup>1</sup> that two distinct formations should be adopted, "line for firing, column for manœuvre and attack." A shallow formation, he considered, had a natural tendency to make men halt and fire, the column induced them to advance. He recommended, therefore, that battalions should attack in column of double companies at deploying distance, their front covered by two companies extended as skirmishers. It was in this formation that the French infantry fought at the commencement of the Revolutionary wars and in the earlier campaigns of Napoleon. Greatly though this system differed in form from the methods of twentieth century battlefields, it nevertheless was based on the same principles

<sup>1</sup> *Précis of Modern Tactics*, Home, revised by Pratt, 1896, p. 237.

as modern infantry tactics, viz. that the main object of fire is to cover the advance, and that all fire action should be regarded as a preparation for the assault. In another respect too the spirit of present-day fighting may be traced in that unity of purpose between the companies chosen for fire action and the companies designed for the assault was ensured by both being detailed from the same unit.

At Austerlitz (2<sup>nd</sup> December, 1805) this method of attack was further developed, the same principle being adhered to. The French infantry had by now been organized in brigades of three regiments, each regiment having three battalions. Napoleon, therefore, prescribed that in the attack the leading regiment should be deployed for fire action, the other two being formed in column of double companies, one on each flank. In issuing these instructions to his army corps commanders he added :

*“ You will, by observing this formation, be able to oppose a line of fire to the enemy, and yet have close columns ready to attack him if requisite.”*<sup>1</sup>

The saving clause “if requisite” is notable. It emphasizes the importance of the fire fight, and seems to contemplate the possibility at times of its proving in itself decisive. Yet it was the bayonet which decided matters at Austerlitz. The columns which won the heights of Pratzen advanced with shouldered arms without making reply to the fire of the hostile infantry.

No commander has ever accepted more wholeheartedly than the great Emperor the truth of the

<sup>1</sup>*Précis of Modern Tactics*, p. 240.

doctrine that victory lies with him who hits hardest at the decisive point. Thus when it became evident that the long years of perpetual war had drained the French infantry of its best officers and men and lowered its offensive morale, he sought to regain its hitting power by forming heavy columns of attack, of divisions in mass of regimental close columns, as at Leipzig (22nd May, 1809), or of a whole army corps formed in square as at Wagram (6th July, 1809).<sup>1</sup> This method, though opposed by the small battalion column formation which the Austrians had adopted from the French, won victory at Wagram, but at an immense sacrifice of life. The advance of these huge columns was still covered by skirmishing fire, yet the natural relations between fire action and shock were dislocated, for it was impossible for mere skirmishers sufficiently to prepare the way for the advance of so great a target. The defect was detected by Wellington and exposed in a masterly manner on the battlefields of the Peninsula.

Every Englishman has or should have had his heart-beats quickened by Napier's description of that glorious moment at Busaco when Craufurd's "1800 English bayonets went sparkling over the brow of the hill" and shattered with their close fire the great French column of attack at the very moment that victory seemed in its grasp, or of that more doubtful and bloodier struggle on the height of Albuera when

<sup>1</sup> i.e. Eight battalions in line deployed closely behind each other on the front face, thirteen battalions in close column on the side faces, with cavalry closing the rear.

the counter-attack of the thin red line of the 7th and 23rd Fusiliers threw into confusion the dense mass of Girard and Dazzican's Divisions, and drove them in disorder down the slopes. The stunning effect of a fully developed fire blow, delivered at short range against a massed target which could not be missed, and which could make but feeble reply, smote home the first wedge of those brilliant counter-attacks; yet even then victory would have been missed but for the bayonet, for it was disciplined confidence in the use of that weapon at the crucial moment that inspired the British soldier in his unfaltering advance.

The sharp lessons of the Peninsula were not lost on the great master of war. His final throw for fortune at Waterloo was made, it is true, with heavy columns, yet at Leipzig he so far followed Wellington's example<sup>1</sup> as to increase the fire power of the French infantry by forming it in two ranks instead of three. Moreover, throughout the campaign of 1814—in many ways the most admirable of Napoleon's expositions of the art of war—the Emperor reverted to the old method of battalion columns covered by skirmishers. The excellence of the tactics of the French skirmishers of the period may be gleaned from the instructions issued to the Prussian army, on the declaration of war, after Napoleon's retreat from Moscow :

*“ Our enemy uses his infantry to delay and sustain*

<sup>1</sup> Wellington—in defiance of the existing drill-book—had ordered the adoption of two ranks in the British army in the Peninsula as early as Vimiero. See *Science of War*, Henderson, p. 360.

*the fight as long as possible ; he occupies villages, woods, houses, and hides himself behind hollows in the ground and in ditches. He causes us much loss with few men ; when we advance against him with larger bodies, then he reinforces his troops with fresh men, and, if we have no fresh troops to send to the front, we have to retire. We must therefore follow the example set by the enemy ; we must husband our fire, feed the battle with fresh troops until the decisive moment arrives, when we can make our chief attack.*

*On account of the great number of volunteers who are armed with rifles, skirmishers must be largely increased ; the advantage these rifles possess is that they have a greater range and are more accurate. The duty of the volunteer so armed is to keep the enemy at such a distance that the rifle fire shall be effective and the smooth-bore ineffective. To send forward skirmishers to attack a village, occupied by the enemy, with the bayonet, is to lose one of the advantages of rifles ; men so armed must be posted in woods or placed in defensive position."*

These instructions, as Colonel Home observed when quoting them in his well-known tactical treatise, "are very remarkable as foreshadowing the direction which tactics of the present day are taking."<sup>1</sup>

But of all human institutions an army is perhaps the most conservative, and this conservatism at times induces a certain reversion to old methods and old ideals should a long period of peace efface somewhat

<sup>1</sup> *Précis of Modern Tactics*, 1896 edition, p. 250.



the memory of the stern teaching of war.<sup>1</sup> Thus at Alma we find the Russians, though lacking the offensive spirit of the old Napoleonic army, yet attempting to oppose the advance of the English line with deep columns, similar to those which failed in the Peninsular war, with the result that once again did the column melt and dissolve under the resolute fire of the British infantry.<sup>2</sup> Even at Inkerman, a soldier's bayonet fight, when a dense fog favoured the Russian columns of attack and made surprise possible, line tactics proved ultimately successful.

Hitherto, however, the fire of infantry had covered but a very short distance to its front. The Crimean war saw the introduction of the Minié rifle, but even in that campaign the normal range, at which the British line poured in its first volley, was not more than a hundred yards. The American Civil war unveiled the dawn of a new tactical epoch, in which the far-reaching infantry weapon was destined to dominate the battlefield. The Confederates, it is true, at the outbreak of the war, save for a few thousand Springfields seized in Harper Ferry factory and other arsenals, possessed only smooth-bores and sporting M.L. rifles. But gradually they acquired by capture such a large stock of Springfields that by the time

<sup>1</sup> The cavalry enthusiasts who, twenty years after the Franco-German war, began to claim that the days of Seydlitz could be reproduced on the modern battlefield, may be cited as a case in point.

<sup>2</sup> The Russians at Alma lost in barely three hours 3700 men, or nearly one-fifth of their whole force. The total English loss amounted to less than 2000 men; that of the French was very much less. V. Moltke, quoted in *Précis of Modern Tactics*, p. 235.

## Infantry

Gettysburg was fought every Southern soldier<sup>9</sup> grasped a rifle of that type, a M.L. weapon having an effective range of from 300 to 450 yards. The Federals were from the outset fully equipped with Springfields. Some of their cavalry, and, in the later stages of the war, a few picked shots of infantry, were armed with breech-loaders, the Sharp B.L. carbine, or the Spencer with an 8-shot magazine, each of these weapons having the same range as the Springfield.

A decade or so after the conclusion of the Civil war its lessons were summed up in four words, "spades and mounted infantry." In a measure, but only in a measure, was this a true summary. The spade, or rather the spade and the axe combined, rendered invaluable service in the primeval forests of Virginia, in the long struggle for the possession of Richmond, in the bloody fight at Gettysburg and Sharpsburg in the north, and at Chattanooga in the west. The achievements of the mounted arm have been glanced at in a previous chapter sufficiently to show that it is certainly inaccurate to classify either the northern or southern cavalry as mere mounted infantry. But however valuable the instruction to be culled from the cavalry work and the use of entrenchments in this great campaign, it would be a delusion to conceive that they exhaust the lessons of the war. The student of tactics looks to them for some guidance in the effect of the increased power of fire and the increased use of entrenchments on the greatest of the problems of infantry, the problem of the attack, and he will not look in vain. The increased range and

accuracy of the infantry weapon, the digging of defenders into their position, the covering of their front with rifle pits, long parapets, and abatis, added much to the difficulties of the attackers' task. Moreover, the contending forces, though equally inspired with national enthusiasm, lacked at the outset battle training and battle discipline. It seemed doubtful therefore whether they could maintain any order or cohesion in the attack. It seemed still more doubtful whether they could endure unto the end and pay the price requisite to win victory by offence.

The effects of the lack of discipline and training are, it is true, lamentably evident in the earlier battles of the war, such as Bull Run and Shiloh. On the Federal side they were most marked, and well-nigh at the outset gave decisive victory to their more rapidly trained opponents. But from the beginning to the end the most remarkable features of the infantry tactics pursued is their offensive spirit alike in attack and defence. In the attack, although as at Fredericksburg and Chancellorsville, the main blow of the attacker was often aimed at the enemy's flank, there was no seeking of bloodless victories by attempts to manœuvre him out of his position, but a determined assault pressed home with the bayonet. In the defence, opportunities for vigorous counter-attacks were eagerly sought for as the sole means of success.

Nor is this all. Notwithstanding the increased power of the foot-soldier's weapon, shock action was held up steadily before him as the true method of gripping victory; fire action, he was taught, but

prepared the way. For the troops upon whom the duty fell to deliver the actual assault, fire action was but a subsidiary business, not to be dwelt on too long, lest the energy of the advance should become expended.

Thus we find Stonewall Jackson, the greatest infantry commander of the war, instructing his newly recruited Virginian brigade that :

*"There ought not to be much firing at all. My idea is that the best mode of fighting is to reserve gun fire till the enemy get—or you get them—to close quarters. Then deliver one deadly deliberate fire and charge."*<sup>1</sup>

How these tactics worked out in that counter-attack at Bull Run, which converted a half-lost battle into victory, may best be learned from Colonel Henderson's glowing narrative, a narrative which—probably of designed purpose—reads like an echo of Napier's historic word-picture of Busaco :<sup>2</sup>

*"Jackson's men were lying beneath the crest of the plateau. Only one of his regiments—the 33rd—had as yet been engaged in the open, and his guns in front still held their own. Riding in the centre of his line, where the 2nd and 4th Virginias were stationed, he gave orders for a counter-attack. 'Reserve your fire till they come within fifty yards, then fire and give them the*

<sup>1</sup> v. *Stonewall Jackson*, Henderson, vol. i. p. 163. It is notable that these tactics of reserved fire were adopted with extraordinary success by the Japanese when repelling the attacks delivered by the 6th Siberian Army Corps in close formation at the battle of the Sha-Ho v. *O.H.R.-J. War*, part v. pp. 80 and 145.

<sup>2</sup> v. *Stonewall Jackson*, Henderson, vol. i. p. 151.

*bayonet; and when you charge, yell like furies!'* Right well did the hot Virginian blood respond. Inactive from the stroke of noon till three o'clock, with the clash and cries of battle in their ears, and the shells ploughing gaps in their recumbent ranks, the men were chafing under the stern discipline which held them back from the conflict they longed to join. The Federals swept on, extending from the right and left, cheering as they came and following the flying batteries in the ardour of success. Suddenly a long grey line sprang from the ground in their very faces; a rolling volley threw them back in confusion, and thus, with fierce shouts pealing high above the tumult, the 2nd and 4th Virginias, supported by the 5th, charged forward across the hill."

At Boteler's Ford (20th September, 1862) we find, after fourteen months' continuous bloody fighting, Jackson's troops still carrying out the same vigorous offensive methods:

"On the north bank of the Potomac were planted seventy pieces of heavy artillery, while under their protection, a considerable force of infantry had passed to the southern side, and were drawn up in line upon the high banks next the river. Under the direction of General Jackson, Hill (A. P.) formed his gallant division<sup>1</sup> in two lines and advanced to the attack, regardless of the terrible storm of projectiles from the batteries beyond the river. The enemy attempted for a time to resist him, by bearing heavily against his left, but his second line, marching by the left flank, discovered itself

<sup>1</sup> This unit was but 2095 strong, having lost 1405 men in the previous fight at Sharpsburg.

*from behind the first, and advanced to its support ; then the two charging simultaneously and converging towards the mass of Federals swept them down the hill and drove them into the river. The troops of Hill rushed down the declivity, and regardless of the plunging shot and shell of the opposing batteries, hurled their adversaries by hundreds into the water, and as they endeavoured to struggle across, picked them off with unerring aim. In this combat General A. P. Hill did not employ a single piece of artillery but relied upon the bayonet alone. . . . The whole loss of the Confederates was thirty killed and wounded. The Federalists admitted a loss of 3000 killed and drowned and 200 prisoners.”<sup>1</sup>*

But these tactics were not merely Jackson's. Chancellorsville (May, 1863) rewarded that noble soldier with a noble death. Two months later his great commander, Lee, made his last throw for decisive victory, when on the third day of the fateful struggle for the Gettysburg heights (3rd July, 1863), he launched 15,000 bayonets against the Federal entrenchments.

*“ The attack was made . . . in two lines. Pickett leading, Pettigrew in short echelon (100 paces) to the left rear, and Wilson's brigade on the right. The distance the men had to traverse was nearly 1200 yards in width. The ground was open, and intervening between them and the enemy were several fences, a field of corn, a tiny brook, and then the open slopes to the Federal position, covered on the crests by earthworks and stone*

<sup>1</sup> Quoted from Dr. Dabney's *Life of Stonewall Jackson*, see pp. 116-7. *The Campaign of Fredericksburg*, by Lieut.-Colonel G. F. R. Henderson.

walls. •Notwithstanding the strength of the position they were to storm, and the terrible fire at that range which the Federal artillery, coming into action again as they advanced,<sup>1</sup> poured into their ranks, Pickett's Virginians advanced with a steadiness and precision which called forth the generous admiration of their gallant enemy. Only the skirmishers in front used their rifles, and the long lines in rear pressed forward without a check. Thrown somewhat into disorder in clearing the fences of the Emmetsburg road, they wheeled half-left at the house which stood in their path, and moved straight up the slope in the direction of a conspicuous clump of trees. The long lines of Federal infantry opened on them in front. The guns, loaded with canister, tore great gaps through the crowded ranks, and from the slopes of Little Mound Top they were enfiladed by more than one battery. As they approached the ridge their lines were torn by incessant volleys of musketry, and the second line crowded in on the first. Under the heavy fire the supporting division on the left had given way, and a Federal brigadier throwing forward a regiment with ready judgment, enfiladed Pickett's line. Yet with unfaltering courage the Virginians broke into the double, and with an irresistible charge went through and over the stone walls which confronted them, driving back their defenders from flank to flank, and planting their colours on the summit of the ridge."<sup>2</sup>

The attack failed, but it failed not by reason of its daring, but for lack of artillery support and for lack

<sup>1</sup> v. Chapter vi. p. 124 *supra*.

<sup>2</sup> v. *The Science of War*, Henderson, pp. 299-300.

of Longstreet's co-operation. Had Lee's design been carried out in all respects as originally conceived, Pickett's infantry's heavy sacrifice would not have been made in vain.<sup>1</sup>

In these splendid advances line formation was adhered to, and the fire of the troops actually told off for the attack as a rule reserved; yet the advance was generally covered by skirmishers. Moreover, the line or successive lines of attack in rear of the skirmishers opened out involuntarily under fire, and the magic touch of elbow to elbow, upon which so much stress was laid in the old Peninsula fights, was abandoned.

One of the great generals, indeed, thus speaks of the Confederate attack: "Whoever saw a Confederate line advancing that was not as crooked as a ram's horn? Each ragged rebel yelling on his own hook and aligning on himself."<sup>2</sup>

Colonel Henderson therefore does not hesitate to term the attack as the advance of "successive lines of skirmishers," and quotes the same Confederate General as an authority for the statement that these lines advanced by means of "successive rushes." The opening out of the lines was of course much less than the extension necessitated by the intense fire of a modern battlefield, but the germ of this extension would seem traceable and was engendered by the same cause.

<sup>1</sup> Pickett's casualties are said to have been six-sevenths of the total strength.

<sup>2</sup> *v. Science of War*, Henderson, pp. 263-264.



Yet later there was a reversion to older methods. At Chickamauga, two months after Gettysburg, "Longstreet formed seven brigades in column of brigades at half distance, and in this formation made a successful breach of the Federal lines."

At Spottsylvania on the 10th May, 1864, Grant had to solve the problem of an attack on Lee's strong entrenchments, covered by abatis. Three divisions—in all some 30,000 men<sup>1</sup>—were detailed for the duty.

*"One on the right was formed in two lines; two-deep lines with a few skirmishers out in front at about 200 paces distant. On the left there was the same formation. A second division was formed in the same way, but in the centre there was a heavy column of twelve battalions formed in four lines at 100 paces distant. . . . The attack was perfectly successful. It was prepared by thirty pieces of artillery, and the central column managed, by making use of the shelter of the wood, to get close to the enemy's works before it was observed. The attack of the two wings engaged the attention of the Confederates. When the word to advance was given the whole twelve battalions moved off as one man; charged the breast-works, swept clean over them, took 1200 prisoners, captured twenty guns, and carried a second line of entrenchments in rear."*<sup>2</sup>

Yet Lee ultimately drove them out with a counter-stroke, and Grant had to try again two days later.

<sup>1</sup> *Science of War*, p. 264, but in another essay (p. 324) the strength of the attacking force is given by Henderson as 20,000.

<sup>2</sup> *Ibid.* pp. 323-324.

## Infantry

On the second attempt he attacked at dawn, forming one division in two lines, and the other two in line of battalion columns of double companies. Again was the abatis broken down, and the trenches after desperate fighting carried with the bayonet (one of the brigadiers even reports that not a man of his battalions fired a single shot).<sup>1</sup> Again did a Confederate counter-attack ultimately sweep back the victorious Federal soldiers beyond the first line of entrenchments. For the whole day the infantry of both sides thus lay "with the parapet between them, in many places not more than ten or twelve paces distant." A familiar situation to the student of the Manchurian battles, but then and later so novel an experience as to be termed by Colonel Henderson (writing not long before the South African campaign) "one of the most extraordinary stories in the annals of war."<sup>2</sup>

The Federals' ultimate failure after a great initial success was attributable on both these occasions to a cause which has a bearing on the fighting of to-day. The following line, *i.e.* the reserve, was allowed in the ardour of the attack to mingle with the first, and no troops were held in hand to act when the counter-attack came. Yet the problem of when to hold in hand and when to let loose the final reserve has in all

<sup>1</sup> *Science of War*, p. 336.

<sup>2</sup> *Ibid.* p. 325. For typical similar instances in the Russo-Japanese war, the stone-throwing in the fight between the 1st East Siberian Rifle Division and the Japanese 3rd Division at Te-li-ssu (*O.H.R.-J. War*, vol. i. p. 191), and in the struggle for Lo-ta-shan during the battle of the Sha-Ho (*O.H.* part v. p. 117) may be taken as examples.

tactical epochs proved incapable of solution by precise rules, and must be left to the judgment of the commander, of whose genius it is perhaps the supreme test. In this and in other respects a close study of the prolonged struggle between North and South in America will prove somewhat of a disappointment to the seeker after novelties in infantry tactics. The germ of the great extension of the modern infantry fight may, as Colonel Henderson pointed out, be traced, but it was not more than a germ. The range and intensity of gun and rifle fire had not as yet so increased as to render it impossible for resolute troops to cross the fire-swept zone in closed line or even column. Fire was still regarded as but a subsidiary, although its claim to be the dominant factor of the battlefield was growing strong, so strong indeed as to determine at times, as at Gettysburg, absolutely the issue. But the most important point of all to note is this. Notwithstanding the rapidly increasing power of fire, and the obstacles to the attack presented by the habitual use of entrenchments, long parapets, abatis and such-like impediments, it is evident throughout all this campaign that the two vital matters for infantry were that an offensive spirit and battle discipline are requisite to secure victory in attack, and that in defence success is only made possible by the delivery of vigorous counter-blows.

These principles hold good eternally, but it was not until the 1870 war that the need for devising new methods for their application was written across the

## Infantry

pages of history in letters of blood. The infantry drill-book, to use the then current expression, in force in the Prussian army at the outbreak of both the 1866 and 1870 campaigns, had remained practically unamended since 1847, and was based on the experiences of the Napoleonic epoch. It recognized the value of fire, and laid much stress on the use of skirmishers, but these skirmishers, or "shooting line," as they were termed, were specialists, in number but one-third of each battalion, specially selected, specially trained, formed on parade into a separate third rank, and in action detached on special duties.

*"The attacking column is the foundation of the fighting formation for the infantry, as it is equally adapted for the order of battle for attack, for retreat when threatened by overpowering cavalry and for movement. It unites in itself independence, strength, and mobility, and it is therefore a fundamental principle that as soon as a battalion prepares itself for battle it assumes this formation with the shooting sections in rear."*<sup>1</sup>

The Prussian battalion of that date was organized, as at the present time, in four companies, each company comprising three sections or "zugs"; of these sections one in each company comprised the trained skirmishers or shooting line. The "attacking column" formation was a line of half battalions in quarter-column of sections, each section being in double rank;

<sup>1</sup> *The Regulation Drill of the Prussian Army*, 1871, Newdigate's translation, p. 143. These regulations were a re-issue of those in force prior to the war. Their revision in the light of the war experiences was not taken in hand till 1876.

the skirmishing sections formed separately either in front, on the flanks, or in rear.

In the attack the skirmishing line advanced 200 yards in front of the battalion, "with its flanks thrown back on that of the battalion." Its movements were directed by signal and were to conform with those of the battalion. Skirmishers were forbidden to fire at individual men at any greater distance than 200 yards. It was prescribed that under normal circumstances

*"The 3rd rank of companies and battalions is for skirmishing fighting, the 1st and 2nd for close fighting. The latter must place great importance upon the steadiness of the rank and file in holding themselves together towards the centre, upon the firing in mass, and upon the bayonet attack; on the other hand, the section for skirmishing must seek its advantage in the dexterity of each man as a marksman, and in making use of the ground, and of the weak points offered by the enemy."*<sup>1</sup>

*"Against cavalry the battalion must carry out all its movements in square."*<sup>2</sup>

On the other hand, in broken ground, enclosed country, woods, etc., the unsuitability of the attacking column was recognized, and the use of company columns, i.e. columns of sections, was suggested. The deployment of a battalion for this form of attack was to be made with one company in advance, covered by its own skirmishers, two companies in support,

<sup>1</sup> *The Regulation Drill of the Prussian Army*, 1871, Newdigate's translation, p. 271.

<sup>2</sup> *Ibid.* p. 290.

and a third in rear ; the 2nd and 3rd companies\* might be used to prolong the first line, but the 4th was always to be kept in hand. In open country the use of this company column formation was forbidden unless there was no danger of cavalry attack, or unless "the timely support of other troops" was assured.

But though these instructions were allowed to remain in the official Prussian regulations even after the conclusion of the 1866 campaign, the experiences of that war convinced the more thoughtful that the changed conditions of fighting demanded a change in tactical methods.

Both Prussians and Austrians had frequently used closed formations in Bohemia, and the success of the Prussian infantry must in the main be attributed to the superiority of the breech-loader rather than to its tactical methods. Yet the destruction of the Austrian columns of attack made it evident that some change in infantry forms and ideas was necessary, and not a few of the infantry company officers were of the opinion that the change must be radical. In a pamphlet entitled *A Tactical Retrospect*, which attracted great attention, although written by an infantry officer of only captain's rank, it was urged that the close formation of troops in action must end, and that all bodies under fire must of necessity open out into irregular lines, and that a continual extension of these lines and a diminution in depth would result. Direct control by battalion commanders was considered therefore no longer possible. Captains

must lead their own companies. It was conceived, however, that the loose extended line might be broken by counter-attack before the main reserve could get up. To meet this danger it was urged that local reserves must be maintained "in folds of the ground" close at hand, and that all stragglers should be collected and reformed for this purpose without regard to their battalion or regiment. The reorganizing of infantry units in action was thus accepted as a feature of modern war. The maintenance of a strong general reserve from one-half to one-third of the whole force under the Commander-in-Chief to meet a general counter-attack and form a rallying-point was further urged.

*"It is only by his reserves that a General retains influence over battle. Without them he leaves the result to chance."*<sup>1</sup>

This brochure seemed directly aimed at the Prussian official system of infantry training, and was deemed sufficiently important to require a semi-official reply in which, although the suggestion that the column was no longer a battle formation was directly contested, it was admitted that

"We find ourselves in a constantly progressive development of the column and skirmishing tactics, which has not yet come to a conclusion,"<sup>2</sup> and it was further urged that

<sup>1</sup> v. *A Tactical Retrospect*, Currey's translation, p. 33. Views somewhat similar, though not quite so advanced, were expressed by Captain Lagman in a pamphlet *About Tactics*, published in 1869.

<sup>2</sup> *A Retrospect to a Tactical Retrospect*, by Col. von Schellendorf, p. 2.

"The author is not justified in reasoning from manœuvre on parade as to what forms would be adopted in actual fight."<sup>1</sup>

On the actual outbreak of the 1870 war certain "Instructions for officers in superior command" were, however, issued confidentially. In the memorandum thus circulated to the 2nd Army it was stated that:

*"The new armament<sup>2</sup> of the French has modified their tactics; they rely chiefly on the efficiency of their fire at long range. We ought therefore to march on the enemy in columns,<sup>3</sup> preceded by a small number of skirmishers. At 1200 paces distant or less the attack formation will be assumed. When effective range is reached, the skirmishers will open a well-maintained fire; the columns will gradually advance covered by the fire to within 200 paces, when they will dash in on the enemy, cheering. . . . For offensive action our company columns offer advantages. Columns of battalions or enormous lines of skirmishers must be avoided. Officers should endeavour to discover the best means of meeting the first volleys of the French. The men will lie down or under cover of the smoke advance at the double. . . . Squares to be avoided, cavalry to be received by infantry in whatever formation they happen to be; the flanks only need protection. . . . We*

<sup>1</sup> *A Retrospect to a Tactical Retrospect*, by Col. von Schellendorf, p. 5.

<sup>2</sup> *I.e.* the chassépot with an effective range up to 1000 yards, the Prussian needle-gun being effective only at 600.

<sup>3</sup> "Column" here means apparently a battalion in close column of sections, the normal Prussian march formation.



*must employ every means for turning the enemy's flank."*<sup>1</sup>

This memorandum would seem to be the high-water mark of the views officially expressed on the development of infantry tactics by the Prussian Staff prior to the actual outbreak of the war. Colonel G. F. Henderson refers indeed to a pamphlet entitled *The Art of Fighting the French*, published privately by Prince Frederick Charles as early as 1864 for the use of the army corps he then commanded, and describes its teaching as "admirable."<sup>2</sup> But the personal views held by that great soldier, when in a comparatively subordinate position, cannot be taken as overriding the official instructions issued by him six years later to the 2nd Army.

The story of this curious conflict in a great army between official<sup>3</sup> and unofficial views on vital tactical questions on the eve of a great war may perhaps seem to some to be only of historic interest. Yet to pass it over in silence would be inexcusable, for it em-

<sup>1</sup> Quoted by the Russian general Zeddeler in an article entitled "L'infanterie, l'artillerie, et la cavalerie prussienne dans le combat et hors du combat," *La Revue militaire*, No. 82, p. 307.

<sup>2</sup> *v. Science of War*, p. 362.

<sup>3</sup> By "official views" is here meant the views officially expressed in regulations and official memoranda. That more modern views had permeated generally the Prussian army before the war is evident from the summary of the prevailing tactical ideas at that date given by Boguslawski in his well-known *Tactical Deductions from the War of 1870-1* (pp. 18-20 Graham's translation). Even what he describes as "the official tactics" (e.g. attack—not in column of attack—but in line of company columns covered by skirmishers (p. 20)) represent a considerable divergence from the letter of the drill-book. Yet he admits "the continual practice of obsolete manœuvres" and the retention of "formations, which sprang from the battles of 1813" (p. 23).

phasizes perhaps better than any other chapter in the history of modern war, the lesson that the spirit in which an army is trained is of more importance than the letter of its tactical forms.

Yet the plea that the forms taught in peace may not necessarily be identical with those that would be pursued in war, though to a certain extent true, cannot be accepted as justifying the deliberate retention of obsolete methods, for the evolution of new tactical forms under the actual stress of shell and bullet entails unnecessary sacrifice of human life, and may even hazard the issues of the struggle. At St. Privat the Prussian Guards lost 8230 officers and men; at Sedan, fighting in more suitable formation, its casualties were but 449. At Mars la Tour 6751 officers and men of the 3rd Corps were killed, wounded, or missing. Yet the aggregate loss of the same corps and of three others of the 2nd Army during the prolonged fighting from January 4th to 31st, 1871, including the three days' battle of Le Mans was but 3950.<sup>1</sup> Obsolete tactical instructions and obsolete forms undoubtedly therefore and unnecessarily enhanced the cost of the German victories in the earlier battles of the war. Against a better prepared adversary victory itself would have been endangered. Yet victory was won. And its seizure was due to the spirit, which permeated all ranks in the German army, the spirit of offence, the spirit of initiative and self-reliance, the spirit of comradeship and self-sacrifice. That

<sup>1</sup> v. German official statistics quoted in Prince Kraft Hohenlohe's *Letters on Infantry*, Walford's translation, p. 5.

spirit was no doubt first engendered by the growth of German nationalism and a German national army, but its nurture was the crowning triumph of von Moltke and his General Staff.

The development of new forms of infantry tactics in the sweat and blood of the series of battles which commenced at Spicheren and Weissenburg and terminated at Sedan, is indeed without parallel in the history of war. Heavy though the cost of the development proved, it would have been yet heavier but for the cult of the defensive then rampant in the French army. Moreover, two pieces of sheer good fortune saved in a measure the attacking side from the worst of the antiquated drill-book formations; the accident that the first four fights, Weissenburg, Spicheren, Woerth, and Colombey, were brought on by unordered and unforeseen dashes of the advanced guard at the enemy, thus allowing greater freedom to the impulse of the moment than a set piece would have permitted; and secondly, the happy chance that the terrain of the first three of those battles was for the most part enclosed or broken ground, in which the use of company columns in lieu of columns of attack was permitted even by the drill-book itself.

Thus at Weissenburg, though we read of the 41st Brigade, after forming up from the line of march for the attack, moving forward "in two columns" (each of two battalions) and later, having seized the deep railway cutting and the hamlet of Gutleithof, advancing against the enemy with colours flying and drums

beating,<sup>1</sup> yet in the advance of the 8th Prussian Brigade on the Landau gate "the skirmishing line" had been gradually reinforced until it included eighteen entire companies, and in this formation, supported by two rifle battalions, it dashed forward to the assault.<sup>2</sup>

At Woerth the frontal attacks of the 5th Corps against the entrenched heights on the western bank of the Sauer were delivered with the bayonet in line of company columns preceded by skirmishers.<sup>3</sup> On the other hand, further south, the crossing of ~~the~~ river between Gunstett and Spachbach necessitated the deployment of the whole of the 41st Brigade "in skirmishing order" so that "the large units had ceased to exist as such before the commencement of the attack, and detachments of different regiments were indiscriminately mixed together;"<sup>4</sup> and, though the battalion of the supporting brigade (the 42nd) at first reinforced this line in company columns, it was "a dense mass of skirmishers" which rushed the road and finally captured the Albrechtshauserhof.<sup>5</sup> Further south the 2nd Division carried the weakly held Morsbronn village in three lines of company columns, and in that formation partly in groups and partly deployed repelled the charge of Michel's Cuirassier brigade.<sup>6</sup> The infantry of the 11th Corps was at this moment distributed in four groups, viz.: seven and a half battalions about Albrechtshauserhof, six and a half battalions west of Morsbronn, five battalions in the

<sup>1</sup> *v. German Official Account*, vol. i. pp. 131-2.

<sup>2</sup> *Ibid.* p. 125.

<sup>3</sup> *Ibid.* p. 170.

<sup>4</sup> *v. Ibid.* p. 173.

<sup>5</sup> *v. Ibid.* p. 174

<sup>6</sup> *v. Ibid.* pp. 175-77.

eastern thickets of the Niederwald, and a small reserve group on the right bank of the Sauer near Gunstett, but these battalions were thus grouped haphazard regardless of divisional, brigade, or even regimental organization. The only orders of higher authority mentioned in the German account as issued in the 11th Corps from this time until the final assault on Elsasshausen refer to artillery movements. Higher control of the infantry appears for the moment to have ceased. Indeed in the right wing at Albrechtshauserhof the battalions themselves had intermingled.

Yet this was set right by a reforming after Albrechtshauserhof had been carried. Then like a well-trained pack of hounds, working instinctively in co-operation, the infantry of the 11th Corps pivoted on its right, and, taking advantage of the retirement of French counter-attacks, carried with a rush the southern edge of the Niederwald. The subsequent advance through the thick undergrowth of that wood was led at first by eight companies of the 83rd Regiment deployed as skirmishers, but the French resistance was stubborn, the losses heavy, and the need for reinforcement constant. Ultimately, the northern edge of the wood was occupied by a line to which four battalions of the 83rd and 88th Regiments, miscellaneous detachments of the 95th, 80th and 87th, and three regiments of the 5th Corps contributed. An open space between the wood and a detached copse stayed further progress, for across this gap the fire of the French chassepots swept with deadly effect. Again, however, did the repulse of a

French counter-attack (delivered in battalion column headed by skirmishers) make advance possible, and so the little copse was at length carried.

The infantry of the 6th Corps now began to suffer heavily from the French guns playing on the edge of the copse. The men were exhausted, the units broken up, and only three intact battalions in reserve remained at the disposal of the Corps Commander. The village of Elsasshausen, a few hundred yards in front, was strongly held by the enemy. The alternative lay between "relinquishment of the advantages which had been purchased at so great sacrifice"<sup>1</sup> or a fresh effort. The close support of their artillery comrades made the effort possible for the Prussian infantry. The German batteries set fire to the village buildings, and the Corps Commander, launching his last infantry reserve into the fight, signalled to the whole line to advance. Thus the village was stormed, a "line of skirmishers" heading the attack, and the three battalions from the reserve, assisted by detachments from all the other regiments, carrying it through.

This success accentuated still further the exhaustion of the troops, and a counter-attack of the French infantry attained some local success temporarily; for two battalions of the 11th Corps and some detachments of the 5th "having no intact supports" and "being almost without leaders" sought shelter again in the Niederwald. Yet the remainder of the Prussian infantry reformed, and repulsed, without difficulty,

<sup>1</sup> *German Official Account*, vol. i. p. 181.

the gallant charge of Bonnemain's four regiments of cuirassiers.

After all this hard fighting through thick woods and in open ground it is not surprising that not more than twelve of the 11th Corps' twenty-five battalions could be collected for the final assault of Fröschweiler, but these units were stiffened by the 2nd Brigade of the Wurtemberg Division, which came up in separate detachments into the fighting line, "yet everywhere forming a solid support to the scattered battalions of the 11th Corps."<sup>1</sup> Fröschweiler, the last bulwark of MacMahon's army, was thus carried after due artillery preparation by the enveloping attack of detachments of every corps that had taken part in the battle. "Troops from the south, east and north stormed the common goal almost simultaneously; and the subsequent convulsive surging of friend and foe precludes . . . any attempt to establish a connection between the various isolated collisions."<sup>2</sup> Nor is there any record of the formations, if any regular formations were possible, in which the final blow was struck. It must suffice to note that the advance was led in person by Von Bose, the 5th Army Corps Commander; it was met by "a murderous fire," there was desperate close fighting, in which guns and eagles were seized by the German infantry, and finally the

<sup>1</sup> *v. German Official Account*, vol. i. p. 186. It is noticeable that in directing this the officer commanding the brigade took upon himself to disregard the orders of the Crown Prince, who had instructed him through the G.O.C. the Wurtemberg Division to march to Reichshoffen to intercept the enemy's retreat.

<sup>2</sup> *German Official Account*, vol. i. p. 190.

defenders, not killed or captured, "fled in complete disorder."

The final disorganization of the fight was, therefore, not dissimilar to that of the typical battles of sixty years earlier. The great increase in the importance of fire action manifested had not abolished the necessity of closing with the enemy. Shock action still remained the culminating point of successful tactics. Yet the most notable features of the battle are, first, the amazing difference between the methods of approaching that culminating point forced by the new fighting conditions on the German infantry and those inculcated in the official regulations; and, secondly, the confusion, loss of higher control and unnecessary sacrifice of life, which the neglect to think out and practise these methods before the war entailed. The honour of those regimental officers and men is the more bright who, in spite of these disadvantages and by virtue of their own initiative, gallantry, and self-sacrifice grasped decisive victory.

The new influence of the accidents of ground on the infantry advance was moreover remarkable. The difficulty of crossing the Sauer, except by improvised hop-pole bridges and such methods, and the entanglements of the vineyards on its western bank, prevented the infantry of the 5th Corps attempting the regulation attack formation. The extension or comparative extension thus forced on it, though at the moment deemed a misfortune, saved it from disaster. Again, the close undergrowth of the Niederwald seems to have been deemed by the French itself a protection



to their right flank against serious attack. Yet it proved the weak point in the position, and became the avenue of approach by which the Prussian infantry penetrated to its heart.

But the envelopment of the French right at Woerth was due to something more than the accidents of ground. It was primarily inspired by that instinct which is best expressed by the saying current in the German army—"The front is difficult, let us try the flanks." The examination of that principle may perhaps best be deferred to a later chapter, but its influence at this epoch on infantry leading is very marked and should be steadily borne in mind.

The main characteristics of the conduct of the infantry fight at Woerth have seemed to demand somewhat close investigation, since Woerth and Spicheren were *par excellence* the educational battles of the campaign. In them the new conditions of war were displayed so clearly as to doom irretrievably the old methods. The features of the two battles, fought on the same day, though many miles apart, were indeed in many respects remarkably similar. At Spicheren, as at Woerth, we find again a general action brought on by the advanced guard throwing itself recklessly without orders or even reconnaissance against a strong entrenched position; the infantry attack again commencing in three lines in the company column formation;<sup>1</sup> the same development of the leading troops into a strong firing line of skirmishers,

<sup>1</sup> v. Distribution of 39th Regiment in its advance from the Winterberg. *German Official Account*, vol. i. p. 210.

the same hurried thrusting forward of reinforcements to strengthen and fill gaps in the line, the same impossibility of maintaining "supervision or unity of action"<sup>1</sup> in woods and broken ground; the same exhaustion and intermingling of the infantry units, the same envelopment of the flanks, the same closing to close grip with the enemy at the decisive point, the Rotherberg, and—but in a more marked degree owing to the peculiar circumstances of the battle and the constant supersession of the supreme commander by the arrival of a senior officer—the same defective higher control.

It may be useful to quote a summary of the changes in tactical methods which these first experiences of modern war forced on the Germans, given in an article on the "Tactical Principles and Methods of the Prussian Army" which appeared in *La Revue Militaire* three years later.<sup>2</sup>

*"As a result of the experiences of the first period (of the war) the Prussians, without departing from the general principles of their tactics, resolved to modify their details. Without any reduction of the depth of the order of battle, the number of the echelons were reduced by abolishing the advanced line. Company columns were retained, but drawn up in three, or, more often, four positions in the same line, but with no rigid rules as to intervals, etc. The concentration of a half-battalion column, at the range which the great mass of bullets reach, was no longer the essential idea. The*

<sup>1</sup> v. *German Official Account*, vol. i. p. 220, as to troops in Gifert Forest.

<sup>2</sup> v. *La Revue Militaire*, 1873, No. 82, p. 96.

*supports were to seek cover carefully in rear of the line of little columns. The skirmishers, detached from each company, or rather from two of the four companies, were to act in larger numbers and with more audacity. They were not to count on the support of volleys or of frequent charges in column. Reserves, although still maintained in closed bodies, were to be more split up, and to be kept at greater intervals from each other."*

It was in this manner for the most part that the German infantry fought out the great contests of Maré la Tour, Gravelotte, and Sedan. Yet at Gravelotte defective peace training once more took heavy toll. It was the Prussian Guards' first action, and that corps, relying on its proud traditions, despised new-fangled methods and desired to get straight at the enemy. It observed, it is true, the letter of the new instructions, forming for its advance against St. Privat in two lines of company columns, covered by skirmishers and supports. But the spirit was neglected. Not waiting for artillery preparation the attack moved forward from cover and came suddenly under a hot infantry fire. Instead of loosening out, the small columns bunched up, and became intermingled. The intensity of the French chassepot fire increased and the advance was stayed. Yet there was no going back. The troops took their punishment, broke up into groups, and lying down some 500 or 600 yards from the wall round the village held by the enemy, replied to his fire until the close support of the artillery, the pressure of the 12th Corps on the extreme French right, and the co-operation of the 11th

Corps almost silenced the hostile fire and made it possible to dash forward and carry the village. The Guards' casualties in this fight were 8000. The heaviest of these losses occurred during the long halt. There the dead could be seen next day lying "in whole ranks in a half circle round St. Privat." But<sup>1</sup> few men fell in the final onward rush. Yet it was evident that victory might have been purchased at a less price. A Royal order published immediately after the battle prohibited therefore absolutely the use of close columns in day attacks, directed officers to dismount under fire, and laid stress on the need for full artillery preparation before delivering the infantry assault.<sup>2</sup>

After Sedan another step in the modernization of infantry tactics was made. Further instructions issued by the German General Staff swept away the old idea that the skirmishing line's duty was merely to cover the advance, and converted it into an attacking line, which, reinforced as might be necessary, should endeavour itself to bring about a final decision.<sup>3</sup> This fighting line, though extended, was thickened early in the advance, and its flanks gradually prolonged so as to envelop the enemy. Supports and reserves were directed to make use of cover, so far as possible, until pushed into the fighting line. In the later stages of the attack the fighting line was taught to advance

<sup>1</sup> v. Prince Kraft Hohenlohe's *Letters on Infantry*, p. 133.

<sup>2</sup> v. General Zeddelier's article, p. 308, No. 82 of *La Revue Militaire*.

<sup>3</sup> v. "Tactical Principles and Methods of the Prussian Army," *La Revue Militaire*, 1873, No. 82, p. 119.

over open ground by rushes in echelon, each echelon throwing itself on the ground as it ended its rush.<sup>1</sup> The intermingling of units was accepted as unavoidable, especially on close ground, where reinforcements had to be pushed in, as circumstances required. Reinforcements were kept in hand so long as possible;<sup>2</sup> the influence of the higher authority over the fight being limited to their use, when once the attack had been launched. Notwithstanding, therefore, the fact that the envelopment of the enemy formed the prevailing idea of German tactics, considerable depth was still maintained in battle formation. The importance of the fight for localities, *e.g.* villages, woods, etc., had been apparent in all the main actions and entailed a series of fights which broke up the battle into stages. The termination of each of these stages was marked with a certain pause during which the exhausted combatants on both sides, as it were, took breath. These pauses were found to be of much value since they allowed the disorganized units to be reformed, and enabled the attacking side to make fresh dispositions for its next advance.

Thus, though at first the intermingling of units and surging to and fro of the fighting line appeared dangerous disorder, while the difficulty of controlling and carrying forward stragglers and skulkers seemed greater than heretofore,<sup>3</sup> a new system of battle

<sup>1</sup> *v.* Prince Kraft's *Letters on Infantry*, p. 135, and *Tactical Deductions*, p. 79.

<sup>2</sup> *v.* *Tactical Deductions*, p. 66.

<sup>3</sup> It is not a little curious that the pamphlet "A Summer's Night Dream," which frankly laid bare some years after the war these

discipline and battle control was evolved, a system which enabled a commander still to impose his will on the enemy by superiority in tactical skill, which still required obedience and self-sacrifice from subordinates, while demanding at the same time from them greatly increased intelligence and self-reliance.

features, should have been quoted recently as proof of the non-staying power of a national army (*v.* article in *Contemporary Review*, July, 1911). They were no real novelty, however, for the rear of Wellington's army, both at Talavera and Waterloo, presented very similar disagreeable sights.

## CHAPTER X.

### INFANTRY (CONTINUED).

MODERN infantry tactics may claim therefore, as their birthplace, the battlefields of the Franco-German war. It would take more space and time than are available for the purposes of this book, to trace out here the influence exercised on the development of those tactics by the Russo-Turkish war of 1877, in which both spade and bayonet figure prominently, or by our own little campaigns of 1878-9, 80-81, 82 and 84-85, the conditions of which were dissimilar from contests between the regular armies of civilized States. It must suffice briefly to investigate the infantry lessons taught by the South African war of 1899-1902 and the Russo-Japanese war of 1904-5, and to endeavour to deduce from these the main principles governing the use of that arm in action. Both investigation and deduction can only at present be partial, for, seeing that infantry tactics are in modern war the very framework of battle tactics, the subject must be dealt with again later in its wider scope under the latter aspect.

It may be well to state first the conditions of the problem to be faced by infantry in the attack. The

foot soldier has two weapons at his disposal, the rifle and the bayonet, and a potential shield in the spade. Eliminating for a moment the natural cover to be found, though not always without diligent reconnaissance, in front of every position, and taking the extreme possibilities of hostile fire, the infantry attack may commence to suffer loss from the fire of the enemy's heavy artillery at a distance of 10,000 yards from the position; from 6500 to 2800 yards the attacking force will be under the fire of both field and heavy artillery, a fire steadily increasing in effectiveness until two-thirds of the distance is covered; from 2800 yards until the position is reached, the attack is liable to the combined force of artillery, rifle and machine-gun fire, the fire of the rifle attaining great accuracy over the last 600 yards. Thus nakedly stated the problem is obviously insoluble, were it not for another and all-important factor, the effect of the gun and rifle of the attacking force. For the attack the all-important object of fire is to facilitate movement,<sup>1</sup> and it is this power of facilitating movement which alone renders it possible in broad daylight for infantry to cross the fire-swept zone to the enemy's position.

Nevertheless, the task remains one of great difficulty, and entails very heavy sacrifices. The questions therefore at once present themselves: Is its accomplishment essential to success in modern war? Cannot victory be obtained in some other way at a less cost? The enquiry may best be dealt with in a

<sup>1</sup> *Infantry Training*, 1911, section 122 (3).



more concrete form: Can victory be won by pure defensive tactics?

Three campaigns, the Franco-German, the South African, and the Manchurian, present an emphatic negative answer to this question. In all three of these wars the defeated side adopted defensive tactics. In South Africa that policy lost the Boers their opportunities in the first phase of the war, and thus doomed them to the slender chances of guerilla warfare against great odds. In 1870, if a Napoleon, a Stonewall Jackson, or a Kuroki had been in command of the French troops at Mars la Tour or Gravelotte, the issue of those battles would have been different. At Liao-yang, at the Sha-Ho, and at Mukden, it was the policy of the defensive which entangled and defeated Kuropatkin's great masses of gallant troops. The explanation of this is not very recondite. Clausewitz, who in his classic work built up once for all time the principles of war, enumerates the elements of tactical advantage as

- (i) Surprise,
- (ii) Advantage of ground,
- (iii) Simultaneous attack from several quarters.

Passive defence, in surrendering the initiative to the attack, surrenders to it all three of these advantages, for even the second, which *prima facie* might appear to be inseparable from the defender's choice of his position, does not really remain with him, seeing that he must hold the whole position, including both its strong and weak points, while the attack can choose for its main effort the latter. The difficulties of

crossing the fire-swept zone which characterize the modern fight, impose, it is true, on the attack a stupendous task; yet these very difficulties carry with them a great compensation, in that the same difficulties confront the defender's counter-strokes. The advantage of the containing power of fire thus enables the attack to allot comparatively weak detachments for the repulse of such counter-strokes, and to mass its main strength at the point or points at which its main blows are to be aimed. Finally, and above all these advantages must be rated Napoleon's maxim that in war the value of spiritual force, compared with that of material, is as three to one. The moral force of a confident anticipation of victory lies ever with the attack.

The teaching of modern history is, then, so clear on the fatal consequences of defensive tactics (except, of course, for a local and temporary purpose), that it is unnecessary to labour a point now universally accepted. But there remains for consideration a tempting alternative, a *via media* between the costly sacrifice of direct attack and the hopelessness of passive defence. The German saying, "the front is difficult, let us try the flank," was no novelty even in 1870, but it then, for the first time, became an axiom of the battlefield, and that for three reasons. The increase in fire power accentuated the difficulties of frontal attack; the lateral extension of the troops entailed by this increase in fire, however, led naturally to an envelopment of the enemy's flanks, and this envelopment disclosed that, though the hostile front

had become difficult to pierce, its flanks were as sensitive as ever to pressure.

Yet in every battle of that campaign the Germans used envelopment, not as the substitute for, but as the handmaid of direct attack. The enemy was first pinned to his position by a direct advance, pushed with vigour and determination. The flank attack then gradually developed and either was itself pushed home as at Woerth, assisted by the frontal attack, or, as at Gravelotte, assisted the frontal attack to push home, or, as at Sedan, in combination with the frontal attack encircled the enemy and destroyed by relentless pressure his power of further resistance.

This doctrine of the combination of frontal and flank attacks was held and practised by our troops in South Africa at the commencement of the 1899-1902 war. The brilliant little action of Elands-laagte is an excellent example of its application. At Talana, Belmont, and the Modder ultimate success was thus attained. Even at Colenso, the oft-quoted example of purely frontal attack, Sir R. Buller planned, though through neglect of reconnaissance the plan was defective, that in combination with the direct attack on the bridges, the Irish Brigade should roll up what was imagined to be the right flank of the Boer position. The scheme of the operation on the left bank of the Tugela, which terminated in the evacuation of Spion Kop, was based similarly on the idea of reaching at and encircling the enemy's flank.<sup>1</sup> It was only

<sup>1</sup> v. Sir R. Buller's instructions to Sir C. Warren, *Official History, South African War*, vol. ii. p. 631, "Until you have so far encircled the

after these two failures had demonstrated that abnormal conditions—the condition of the ground and the superior mobility of the enemy—had made envelopment wellnigh impossible, that flank attack was definitely abandoned and the enemy's centre aimed at. Vaal Krantz proved too tough a nut to crack, but at last, a fortnight's continual fighting mastered the group of hills—Wynne's, Hart's, Kitchener's and Pieter's, which guard the way to Ladysmith up the Dorn Spruit valley, and then the relief of that town was effected.

Unfortunately public opinion, untrained to military judgment, smarting with the humiliation of the checks to the British arms, and unprepared by many years of easy victory over indifferently armed opponents for the heavier casualty lists of serious war, conceived that the lives of British soldiers had been sacrificed by a stupid adherence to what was erroneously termed the "Aldershot" method of direct attack. Influenced, or rather compelled, by the force of this popular outcry on the organization of the British Army in South Africa, in January, 1900, the following tactical instructions were issued to infantry commanders :

*"We have to deal with an enemy possessing remarkable mobility, intimately acquainted with the country, thoroughly understanding how to take advantage of ground, adept in improvising cover and most skilful in the use of their weapons. Against such an enemy*

enemy that you can wheel to the east, pray always try to envelop their right with your left."

*any attempt to take a position by direct attack will assuredly fail. The only hope of success lies in being able to turn one or both flanks or what would in many instances be equally effective, to threaten to cut the enemy's line of communication."*<sup>1</sup>

By direct attack, no doubt, was meant pure frontal attack without any attempt at envelopment, but the last sentence of these orders led, and not unnaturally led to the assumption that (to quote subsequent German criticism), "a new road to victory without the shedding of blood" should be sought. At Paardeberg this new idea was not tested, but after Paardeberg, from Poplar Grove up to the termination of the second phase of the campaign, with the single exception of the attack driven home by General Kelly-Kenny's battalions on the Driefontein kopjes, the tactics of mere demonstration against the enemy's front, and of trusting to envelopment to force him to evacuate his position were steadily pursued. These tactics had indeed a considerable measure of success. They secured, at but slight cost, the occupation of the Boer capitals, and the disintegration of the Boer main army pressed eastward against the Portuguese frontier; but they failed to break down the Boer power of resistance, and resulted in a protracted guerilla war. Complete and prolonged trial was therefore made of the idea that the difficulties of the fire-swept zone could be ended by envelopment. The results of this trial proved that even against weaker forces this manœuvring for positions can

<sup>1</sup> v. *Official History, South African War*, vol. i. p. 445.

secure only negative results—results which will seldom further the object for which alone battles are fought, the termination of the war by enforcing on the enemy the will of his conqueror. Against equal or stronger forces such methods cannot be attempted without the gravest risk of a disastrous counter-stroke. Envelopment is indeed a valuable handmaid to direct attack. The decisive attack will even usually be aimed at one or other of the enemy's flanks. Yet “as a general principle the greater the fighting power and the offensive spirit of the adversary, the more advisable will it be for a commander to engage him effectively along the whole front, while adequately covering his own communications, before attempting to force a final decision.”<sup>1</sup> This pinning of the enemy's front cannot be effected by any mere demonstration such as was attempted by the 6th and 7th Divisions at Poplar Grove. It must be a real attack, delivered unreservedly, that is, with the intention of pressing it home. The problem of infantry frontal attack cannot, therefore, be evaded by the doctrine of envelopment, and this the more so, having regard to the enormous front caused by modern national armies.

*“The term ‘decisive attack’ does not imply that the influence of other attacks is indecisive, but rather that it is the culmination of gradually increasing pressure relentlessly applied to the enemy at all points from the moment when contact with him is first obtained.”*<sup>2</sup>

<sup>1</sup> *Field Service Regulations*, 1912, part i. section 102 (3).

<sup>2</sup> *Ibid.* section 103 (1).

Even when, therefore, the flank of the enemy's army is selected for decisive attack, his whole front must be, not merely contained, but attacked with determination and relentlessly pressed. This front will not probably be held by an absolutely continuous chain. There will be weak points, and even some gaps, which may at first sight appear to offer opportunities for local envelopment and local flank attack. Yet this appearance, though well worth testing, may prove deceptive.

Thus, during the second phase of the battle of Liao-yang after Kuropatkin's concentration on his "advanced position" the valley of the Ta-ssu brook—an open plain some three miles in width, and at that time of year covered with kaoling crops offering excellent cover—intervened between the right of the 3rd Siberian Army Corps on the heights south of Tsao-fan-tun and north of Men-chia-fang and the left of the 1st Siberian Army Corps in occupation of the Shou-shan-pu positions.<sup>1</sup> This valley, although commanded to a certain extent by the Russian artillery, was, in the original tactical distribution of the Russian Commander-in-Chief's troops, otherwise very weakly held. To remedy this defect Kuropatkin organized a special force of a Cossack regiment, four batteries and 6½ battalions, under the command of General Patilov, posting it on an under feature between Tsao-fan-tun and Pa-chia-kan-tzu, which shut in the eastern side of the valley towards its lower or northern

<sup>1</sup> v. Map giving situation for 30th August, 1904, *Official History, Russo-Japanese War*, part iv.

extremity. The main position of the 3rd Siberian Corps, i.e. the heights from Tsao-fan-tun to the Menchia-fang-Shih-chang-yu road, was held by six battalions in the front line supported by twenty-two battalions in reserve. This position was attacked at dawn on the 30th August by the 10th Japanese Division, assisted by two regiments of the 10th Kobi Brigade.<sup>1</sup> The attack was organized in three columns, the left of which (two field batteries, five battalions and some cavalry) marched down the Ta-ssu valley, and thus attempted to turn the apparently exposed right flank of the 3rd Siberian Army Corps. Whether the Japanese Staff were or were not aware of the strength and position of the Patilov detachment is not stated in the *British Official History*. It would seem probable that its presence had remained undetected. The assailant, however, should have in any case foreseen the possibility of such an inner garrison, and should, moreover, have appreciated that an attack so directed would be liable to be enfiladed and taken in reverse by artillery fire from the heights commanding the valley to the east and west. In a previous chapter (Chapter VI. pp. 154-5) it has been narrated how this converging artillery fire was in fact arranged during the fight by the personal order of the Russian Commander-in-Chief. The Japanese column, as it emerged from the cover of the kaoling, was thus caught in an intense gun fire converging on it from three directions, and had to abandon its purpose, with the result that both the right and the

<sup>1</sup> *Official History, Russo-Japanese War*, part iv. pp. 59, 61.



eastern columns were forced to relinquish a lodgment effected on the slopes of the main position, and fell back with the left column to their bivouac, "for the first time during the war . . . smarting under a sense of defeat."

The dangerous position of the Japanese Guards after the failure of their attack on Chien-Shan (13th October, 1904), during the later days of the great struggle on the Sha-Ho, illustrated too the risk which may be incurred by an attempt to envelop locally a flank locally exposed by a gap in the enemy's front. Kuroki's audacity in offence may well be held one of the most brilliant features of Japanese leadership throughout the war. Yet at times it was a shade too optimistic. On this occasion, relying on imperfect information, he conceived that victory had been assured by the operations of the 12th, and that it remained but to reap its fruits. Stackelberg's and Rennenkampff's great forces, of a combined aggregate strength of forty squadrons, 194 guns and ninety-six battalions, had abandoned their attempt to force the eastern passes, and might, he imagined, be now ignored as any serious menace to the right flank of the 1st Army. If this were so, the 4th Siberian Corps lay isolated on the Chien-Shan heights on the extreme left of the Russian main army, and might be driven in and perhaps even destroyed with a sudden and smashing blow. The task was assigned to the Guards Division, which, after a night march and night attack (11th-12th October), had rested for twenty-four hours on the hills north and north-east

of Pa-chia-tau.<sup>1</sup> The arrangements for the attack were made by the Divisional Commander with care as regards the disposition of the infantry, but failed to secure for that infantry the essential support of the fifty-four guns at his disposal. A strategic flank guard of three battalions and a battery was posted to the north-east to protect the right flank against the possibility of interruption by Stackelberg. The 1st Guards Brigade was detailed for the frontal attack, the remaining regiment of the 2nd Brigade being ordered to move against the left flank of the 4th Siberian Corps' position. The 1st Brigade, moreover, itself detached a battalion to turn the right flank. Notwithstanding, however, these arrangements for a double envelopment, the attack failed. The Japanese guns were too far back to keep down the punishing fire of the Russian artillery. Mischenko's Cossacks, who were assisting the 4th Siberian Corps, detected in time both the turning movements. That on the right was taken in flank and enfiladed. A knoll that intervened between the left and main attack having been seized by the Russians, desperate attempts at its capture came short of success. Simultaneously with the report of these failures, Kuroki learnt that Watanabe's detachment—the strategic flank guard to the north—was being driven in by superior force. It had in fact been struck by a detachment of four batteries, eight battalions, and a squadron despatched by Stackelberg under the command of General

<sup>1</sup> *Official History, Russo-Japanese War*, part v. p. 112, and map giving situation for 13th October, 1904.

Alexiev to await the 4th Siberian Corps. The line of retreat of Asada's repulsed columns was thus menaced dangerously. His attempt at envelopment was itself enveloped, and the division therefore fell back rapidly to the Pa-chia-tzu hills. Asada appealed to Kuroki for help, and the latter in turn appealed to the Commander-in-Chief, who deemed the situation sufficiently serious to warrant the instant despatch of his general reserve. If Alexiev had had, as he might well have had, a stronger force at his disposal, and had used it vigorously, the situation of the 1st Army would have become very grave.

We are forced then to conclude from the study of recent war that—

(i) Envelopment cannot be regarded as an alternative to frontal attack, although a most valuable assistant.

(ii) In applying that relentless pressure to every portion of the enemy's battle line, which is essential to success, the assistance to be obtained from local flank attacks is subject to very definite limitations. Yet the task devolving on infantry in the attack is the most formidable of all enterprises known to war. How formidable may be gathered by recalling one or two of the occasions on which troops of the highest reputation and of the most indisputable gallantry were worsted in that task by the enemy's fire.

At the battle of the Modder the duty of carrying the Modder River village, believed at the time to be held by the enemy only as an advanced post, was assigned to the Guards Brigade. Two battalions

were detailed to make a frontal advance, a third, reinforced a little later by the fourth from the reserve, being despatched to turn the enemy's left flank. The turning movement was arrested by the river Riet, the existence of which, notwithstanding a cavalry reconnaissance in that direction on the previous afternoon, was unknown to the infantry brigadier.

Meanwhile the frontal attack: "*arrived within 1,000 or 1,100 yards of the enemy, who lined the river bank. At this range the hostile fire was so severe that it became impossible to get nearer and, as the day wore on, the difficulty of keeping the men supplied with ammunition grew more and more serious. When night put an end to the engagement, in many companies the soldiers had but two cartridges left in the pouches with which to cover our attack or repel a counter-stroke. So long as the men lay flat upon the ground they were little molested, as a growth of thistles hid them from the enemy's view, but any attempt to rise brought upon them a shower of bullets to which they were unable to reply with any effect, as the Boers, perfectly protected by their trenches and concealed by the vegetation which lined the river's bank, suffered but little from the shrapnel of the supporting British guns, and could not be seen by the infantry.*"<sup>1</sup>

At Nan-shan, but eleven companies of Russian infantry and a few scout detachments kept at bay three Japanese divisions from 5 a.m. to 5 p.m., although the repeated attacks of the latter were supported by a superior artillery, and were delivered

<sup>1</sup> *Official History, South African War*, vol. i. p. 251.

with great determination. Had the Russian Commander used his reserves, there is a considerable probability that Oku's army might have met with a serious repulse. On three occasions during the Manchurian campaign, the Japanese Guards failed either wholly or partially to carry out missions assigned to them. At Yang-tsu-Ling two out of three columns organized from the Guards Division, Asada's, and Yamada's effected nothing. The third—Watanabe's—secured a footing on the west side of the Lan-Ho valley, but failed to reach the main position held by the enemy.<sup>1</sup>

At Liao-yang on the 26th August the Guards made an unsuccessful attack on the Kao-fung-ssu heights, Asada's brigade experiencing considerable difficulty in repelling the counter-stroke of the Zazaïsk regiment and being left for some hours in a "difficult and even dangerous" situation.<sup>2</sup> The failure of the division in its attack on Chien-shan on the 13th October was still more complete, and has been already discussed.

The problem of direct infantry attack must nevertheless be faced, and that frequently. Modern military history appears to indicate three methods for its solution :

A. Night attack.

B. A night march with a view either to

(a) attack at dawn ; or

<sup>1</sup> *Official History, Russo-Japanese War*, vol. i. pp. 275-77 ; v. also *A Staff-Officer's Scrap-Book*, vol. i. pp. 329-332, for Sir Ian Hamilton's comments on the Guards' failure.

<sup>2</sup> *Official History, Russo-Japanese War*, vol. iv. p. 21.

- (b) the seizure before dawn of a close-fire position—(a process termed in the *Field Service Regulations* “a night advance” [section 129 (1)]).

(c) Day attack.

The detailed discussion of night operations will be deferred to another chapter, but it would seem convenient to consider here to what extent they obviate recourse to frontal attacks by day. It is obvious that night marches, night advances, and night attacks nullify or rather render useless the long range of the modern gun and rifle, and reduce the fire-swept zone to dimensions less than it had in daylight a century ago. It is a matter for surprise that so little use was made of these methods in the first and second phases of the South African war. The sorties from Ladysmith against Gun Hill and Surprise Hill and the lodgment effected by the Boers on Wagon Hill under cover of the darkness were, it is true, examples of their successful adoption; but the failures of Nicholson's Nek, Stormberg, and Magersfontein left an impression on the minds of British commanders that, on the whole, the game was not worth the candle, an impression which, however, gradually wore off, so that the guerilla war period saw constant night marches and frequent night attacks, delivered by both British troops and Boers.

In the Russo-Japanese war night operations take their place for the first time as a normal tactical method. Yet, excepting the minor operations of the night assault on the little town of Chin-chou, the

night before the battle of Nan-shan, no actual night attack was attempted by the Japanese until Ta-shih-chiao, when the 5th Division, having failed during the day (24th July) to carry the Tai-ping Ling, was allowed to attempt the capture of that position the following night. The attempt proved successful, but successful only in so far that it drove back the rear-guard left by Zarubaiev to cover the retirement of his army. Yet the battle of the Yalu, where the advance of the Japanese artillery to their covering positions on Kintei and Kyuri Islands and the passage of the main river by the Guards and 2nd Division were effected under cover of the darkness, Nan-shan, when Oku's batteries similarly moved into their battle positions, and Te-li-ssu, when the 5th Division occupied before dawn its line of deployment for attack, are good examples of night marches and night advances. The fights for the mountain passes at Hsiu-yen, Fen-shiu-Ling, Hsi-mu-cheng, Mo-tien Ling and Chao-tou saw no further use of night operations on the Japanese side, save that the dispositions for the last-named battle were made before dawn, but in the twin actions of Yang-tsu-Ling and Ya-shu Ling (30th-31st July) the 12th Division, with a view to subsequent advance, entrenched at night between the Chao-tou position and Shih-shan ridge, the Guards in three columns marched all night to turn the Russian right flank (a march which failed somewhat in its purpose, the troops at its termination being too tired to attack vigorously), and Osaki's brigade, transferred during the night from Kuroki's left wing to his

right, had the good fortune to arrive at precisely the right moment to complete the overthrow of Colonel Marston's brigade, retiring from Pien Ling.

During the first six months of the war, therefore, its records show only one serious night attack, that of Ta-shih-chiao, an attack undertaken to retrieve a day failure. On the other hand, they give many excellent examples of the movements, preparatory to battle, being carried out under cover of darkness, either to conceal them from the enemy, or to avoid molestation.

The battle of Liao-yang commenced, however, with a night attack on a large scale. The Russian army was then holding its first line of defence, the outer entrenched position facing south from An-shan-chan to Lang-tzu-shan, with its left flank thrown back to the north-east on the line of the watershed intervening between the Nan-Ho and Tang-Ho rivers. This latter line of heights, known as the An-ping position, was occupied by the 10th Corps. The 1st Japanese Army was ordered by Oyama to gain possession of this position, to push across the Tang-Ho and to extend its left westward to join hands with the 4th Army. To meet the requirements of Oyama's subsequent designs, the latest date to which this preliminary action could be postponed was the 26th August. Kuroki completed his approach marches on the afternoon of 23rd August. On the right of the Russian 10th Corps lay the 3rd Siberian Army Corps, its main body on the left bank of the Tang-Ho facing south, with one brigade on the right bank linking up



with Sluchevski's troops. To ignore the 3rd Siberians and concentrate the whole of the 1st Army (Guards, 2nd and 12th Divisions) for the attack of his immediate chief objective—the An-ping position—would have been dangerous for Kuroki, seeing that his left flank would thus have been left exposed.<sup>1</sup> He directed, therefore, the Guards to attack the 3rd Siberian Corps on the morning of the 26th August. The 2nd and 12th Divisions were thus left available for the assault of the 10th Corps, holding a continuous line of heights facing nearly due east from hill 2100 on the south to the Hung-sha Ling pass on the north.

“Between the Lan Ho and the passes leading down into the valley of the Tang Ho, the country was a broken mass of precipitous ravines quite unfitted for the movement of field artillery. It was for this reason that half the guns of the 2nd Division had been handed over to the Guards, and had been replaced by a single battery of mountain guns, which was attached to the 3rd Brigade. In these circumstances General Kuroki decided that in operating against the Russian centre he must trust to infantry alone, and that his best chance of success lay in a night attack. *The risks which are inseparable from night operations were fully realised*, and the most minute details of the intervening ground were carefully studied, with the result that when the 2nd Division left its camp at 4 p.m. on the 25th August,

<sup>1</sup> v. Map giving situation 26th-28th August, 1904, part iv. of *Official History of Russo-Japanese War*.

every staff and regimental officer knew exactly what was expected of himself and his men.”<sup>1</sup>

Similar reasoning led to the 12th Division being directed simultaneously to deliver a night attack on the Ta-han-po-Ling pass, through which the main road to An-ping crossed the hills, and on the Hung-sha-Ling pass, which further north dominated the surrounding country and formed a *point d'appui* for Sluchevski's left flank. Both divisions had to execute approach marches of several miles before delivering their attacks. That of the 2nd Division was delivered as a division, that is, the 15th and 3rd Brigades attacked side by side in tactical touch with each other. They succeeded in carrying the enemy's first line of trenches, but after dawn were checked, and Kuroki's only reserve having been despatched to the assistance of the Guards, no further progress could be made.

The brigades of the 12th Division were more isolated. The 12th, under Shimamuna, succeeded in capturing its immediate objective, the Ta-han-po Ling pass before dawn, and later in the day, helped by artillery fire, pushed on to San-chia-tzu. But to the 23rd Brigade fell the heaviest task and the fullest harvest. Its leading regiment effected a lodgment during the night on the eastern side of north Pa-pan-Ling, and, after desperate fighting all the forenoon, carried that hill about 3.30 p.m. on the 26th. This capture menaced the whole line of retreat of the 10th

<sup>1</sup> v. *Official History of Russo-Japanese War*, part iv. pp. 23-24, but the words italicised are not so marked in the original.

Corps.<sup>1</sup> Heavy rain had fallen, and was still falling, the fords of the Tang-Ho were impassable, and it was feared that the bridges might be carried away. Kuropatkin, therefore, directed the immediate withdrawal of his eastern army across the Tang-Ho, a movement which necessitated the complete evacuation of the An-shan-chan position by the western wing of the Russian army. Thus Kuroki's night operations and bold subsequent offensive, notwithstanding the critical position at one time of the Guards, the only partial success of the 2nd Division, and the prolonged and, for hours, doubtful struggle for the Pa-pan-Ling, achieved fully their object.

Yet in the five days' fighting of the main battle (30th August-3rd September) the Japanese Staff only once resorted again to night operations, the task of capturing Manju Yama by night assault falling to the same 23rd Brigade<sup>1</sup> that had distinguished itself so brilliantly at north Pa-pan-Ling. On that brigade too lay the responsibility of repelling the two Russian attempts to re-take that hill, the second of which led to very severe night fighting.

The battle of the Sha-Ho presents for study seven consecutive days of almost incessant fighting (10th-16th October), but the frontage of the battlefield was so great that on every one of those days a large

<sup>1</sup> The night assault on Manju Yama was, like the night attack on the 5th at Ta-shih-chiao, delivered after failure by day. Sir Ian Hamilton, who was present with the 1st Army Headquarters, gives the credit of taking the risks—and they were serious—involved, to “the calculated Nelsonian impetuosity of Okasaki”—the Brigadier. *v. A Staff-Officer's Scrap-Book*, vol. ii. p. 98

number of more or less separate actions were fought out concurrently, each having for its objective a specific separate locality, a particular height, a group of villages, a definite portion of a river-bed, a pass, or an isolated hill. These fights were usually carried through by individual divisions, or often by individual brigades. They were all, it is true, closely linked together, insomuch that all the Japanese armies were pressing simultaneously against the enemy's front and carrying out in absolute unity their Commander-in-Chief's orders. Moreover, the success of each unit in turn either directly or indirectly helped on the advance of the adjacent units. A danger in one quarter was relieved by additional exertion or pressure elsewhere. Yet, notwithstanding this, the great battle may, and indeed must, without violation of its tactical unity, be regarded as a multitude of battles, in each of which the circumstances of the situation had some particular characteristic. The reckoning up of the number of these actions during the whole seven days would perhaps be profitless. It may suffice to note that between sunset on the 11th October and sunset on the 12th fourteen may be counted. It would be safe, therefore, to assume that the aggregate of the week's struggle was not less than fifty. Of these only five were night attacks initiated by the Japanese, and of the five, three took place on the same date, the night of the 11th-12th October. Both of the only two Japanese night advances occurred that same night. There was only one night march, the march made by Matsunaga's brigade to

Chao-hsien in the pouring rain of the following night.

The coincidence of so large a proportion of these night operations on the second night of the battle was, of course, not due to chance, but brought about by Oyama's supreme direction of his army. His great counter offensive move had commenced on the morning of the 11th. Late that afternoon the reports to Headquarters indicated that lodgments had been effected in the Russian advanced guard positions by the 2nd Army at Yang-chia-wan and Yen-tao-niu-lu, and by the left wing of the 1st Army at Temple Hill. On the other hand the 4th Army had gained no ground on the enemy, while the right wing of the 1st Army was holding its own with much difficulty at the passes. Not only had Kuropatkin at his disposal sufficient force to the eastward to crush the 12th Division and Umezawa's brigade and envelop the Japanese right, but westward Dembovski's troops and the 6th Siberian Army Corps could be used to strike Oyama's left, while behind the Russian centre there were still ample reserves. The situation, therefore, was one of considerable anxiety for the Headquarters Staff at Yen-tai. A cautious Commander-in-Chief would have hesitated and hedged, have drawn in more troops to his reserve, have warned his subordinates not to commit themselves too irretrievably to the offensive. Not so Oyama. He saw that that way lay no victory, and that the one chance of final success was to grip closely the enemy, to strike instantly with all his force and not wait to be stricken.

Every risk must be taken, rather than let the initiative fall to his opponent. A great night attack was therefore ordered on the Russian centre. The most sticky of the divisions of the 4th Army, the 5th, was replaced by an equivalent force of artillery and infantry from the general reserve, and the 4th Army, thus reconstituted, ordered "to drive back the enemy at San-chia-tzu during the night"<sup>1</sup>—the 2nd Division to co-operate, the 2nd Army to continue to attack the Sha-ho-pu position. A gap created by these directions between the 4th and 2nd Armies was, as has been already related, filled by an artillery concentration, made up partly of batteries from the general reserve (*v.* Chapter VI. pp. 150-1 above). Oyama thus deliberately weakened his reserves, and took the risks of night operations on a large scale, in order to carry through his offensive plan and drive instantly a wedge into the Russian centre.

These orders resulted in the three night attacks, viz.: (a) an attack of the 4th Army on San-kuai-shih-shan and Nan-shan. This attack was carried out by no less than five brigades, the 8th and 20th Brigades leading, the 10th Kobi Brigade following 150 yards in rear, the 3rd and 11th Kobi Brigades being kept in reserve, one and a half miles further back. Thus thirty battalions were committed to the enter-

<sup>1</sup>*v.* *Official History, Russo-Japanese War*, part v. p. 62, and map of situation on 11th October. Japanese Headquarters, when issuing this order, were apparently as yet doubtful whether the 3rd Brigade's attack on Temple Hill had secured possession of San-chia-tau. The objective meant for the 4th Army was obviously, however, the broken group of hills north of that village.

prise, in aggregate strength probably over 20,000 men. The force was accompanied and personally commanded by Nodzu, the Army Commander.

(b) A brigade attack of the 3rd Brigade (Matsunaga's) on San-cheng-tzu-shan.

(c) An attack, or rather a forward march with intention to attack, of the Guards Division in four regimental columns, to each of which was assigned a separate objective. \*

In attack (a) the stubborn resistance of the four battalions of the 145th (Novocherkask) Regiment entrenched on the San-kuai-shih-shan diverted the 20th Brigade from Nan-shan, the objective assigned to it. After, therefore, a whole night's hard fighting, Nodzu's 20,000 infantry only achieved the occupation of one objective, San-kuai-shih-shan, and that with a loss of 60 officers and 1250 men. Moreover, so great was the confusion into which his first line had been thrown during the night, that for several hours after sunrise no further advance was possible.<sup>1</sup> Having in view the large number of guns (ninety) at Nodzu's disposal, available to support the infantry in daylight, it seems probable that, had the general situation permitted the attack being postponed till next morning, the same results could have been obtained at no greater, or even less cost and the confusion of units and exhaustion of personnel avoided.<sup>2</sup> The force employed seems, in fact, to

<sup>1</sup> v. *Official History, Russo-Japanese War*, part v. pp. 68-9.

<sup>2</sup> It is to be observed that the 4th Army did not seem capable of a combined strenuous effort on the 12th and failed in its attack that day

have been too large to be handled efficiently and economically as a whole at night.

Attack (b), after a fight of six hours, achieved complete success, although incurring a loss of more than 1000 men. Matsunaga was able, moreover, to push on with his brigade early next morning, across the Shang-lui-ho-tzu valley, and drive the Russians off the hills above Shao-ta-kou.<sup>1</sup>

In attack (c) only one column, that of the 3rd Guards Regiment, was involved in a serious struggle—the “peculiarly bitter and prolonged”<sup>2</sup> bayonet fight for the razor-backed ridge of Watanabe Yama—but all four columns reached their objective either at dawn or in the forenoon of the 12th, and thus made good ground, which had on the previous day been found impossible to carry in daylight.<sup>3</sup>

Equally unsuccessful were the two night advances in the 2nd Army. The aim of each of these was to seize and entrench close-fire positions, from which attacks could be launched next day on the groups of villages bordering the Shih-li-ho stream. Five battalions of the 6th Division entrenched during the night within 600 yards of Erh-shih-chia-tao.<sup>4</sup> The right wing of the 3rd Division's first line dug itself in east and west of the Mukden<sup>5</sup> road, while its left,

on Mau's twelve battalions holding Lo-ta-shan and Nan-shan, although assisted by the six battalions of the 15th Brigade. v. *Official History, Russo-Japanese War*, part v. p. 90.

<sup>1</sup> v. *Official History, Russo-Japanese War*, part v. pp. 69, 293.

<sup>2</sup> v. *Staff Officer's Scrap-Book*, vol. ii. p. 222.

<sup>3</sup> v. *Official History, Russo-Japanese War*, part v. pp. 47, 93-97.

<sup>4</sup> v. *Ibid.* p. 77.

<sup>5</sup> v. *Ibid.* p. 82.



being driven during the night pell-mell out of Yentaoniu-lu by the bayonets of Glasko's six battalions, rallied,<sup>1</sup> and entrenched themselves within 400 to 800 yards of that village.<sup>1</sup>

Of the remaining two night attacks delivered by Japanese troops during the battle of the Sha-Ho, one—that of the Guards on the hills 787 and 774—took place before dawn of the second day of the battle, and effected a useful lodgment in the Russian outpost line.<sup>2</sup> The other—that of the 3rd Division—was delivered before the dawn of the 14th on the 10th Russian Army Corps, which had suffered severe losses in the previous fighting. The division had good fortune. Two scare fusillades earlier in the night had led to the withdrawal without orders of a portion of the Russian outposts. Penetrating unobserved into the gap, the Japanese annihilated two batteries, and captured seventeen guns.<sup>3</sup>

On the Russian side during this battle the only known night enterprise taken in hand was the famous re-capture of the Putilov and Novgorod hills.<sup>4</sup> This attack commenced at dawn on the 16th October, and was organized in three columns, one for each objective, and a flanking column, twenty-one battalions in all being employed. Yamada, who was holding the hills with but five battalions (41st and 20th Kobi

<sup>1</sup> v. *Official History, Russo-Japanese War*, part v. pp. 64, 282.

<sup>2</sup> v. *Ibid.* pp. 45-46, and map for 11th October.

<sup>3</sup> v. *Ibid.* pp. 135-6.

<sup>4</sup> v. *Ibid.* pp. 160-164, also *Journal of the R.U.S.I.*, No. 402, pp. 1028-1032.

Regiments) and five batteries, had ordered a retirement on perceiving the strength of the force menacing him. From a Japanese point of view, therefore, although involving the loss of sixteen guns, it was in reality but a rear-guard action. Yet the collision in the darkness between two of the Russian columns—the Novgorod and the flanking—emphasizes the difficulty of handling a large force at night, and the need for great simplicity in such attacks.

The part played by night operations in the battle of Mukden, and their influence on the result, cannot be properly assessed, until its history has been more fully written. From the narratives at present available, it would appear that divisional counter-strokes delivered at night by the Russians during the earlier days of the battle, such as the attack of the 17th Army Corps on the Sha-Ho railway bridge on the night of 27th–28th February, and the attack of the 25th and Schatilov Division on the Japanese 1st and 7th Divisions after dark on the 2nd March proved useless and very costly. On the other hand, on the night of the 9th–10th March the Japanese made great efforts with considerable success against Kuropatkin's retreating army, one of these attacks being delivered simultaneously by two and a half divisions.<sup>1</sup> The circumstances of this latter instance were obviously exceptional. As in the case of the night attack of the 4th Army on San-kuai-shih-shan, instant action was necessary, while the weakening morale of a

<sup>1</sup> *The Battle of Mukden*, translated from *Militär Wochenblatt*, by Karl von Donat, pp. 18, 22, 248–51.

half-beaten and retreating enemy justified the hope that great results might be obtained.

The experiences of the Russo-Japanese war, therefore, seem entirely to justify the deductions therefrom of the General Staff, that :

*“Night marches and night advances may be undertaken successfully by large bodies of troops. Night attacks, that is to say, attacks delivered in the dark, should rarely be attempted by a force larger than an infantry brigade against a single objective, unless the conditions are exceptionally favourable.”* (Field Service Regulations, section 129 (3).)

The General Staff further observe that :

*“Night attacks may not infrequently be forced on an assailant by the fact that the conditions of the fire fight have been or are certain to be, adverse. Circumstances may prevent the successful co-operation of the attacker’s artillery, or it may be important to neutralise the effect of the defensive artillery. A night attack may thus be justified as the only possible solution of a difficult situation, but when the conditions of the fire fight are likely to be favourable, it will probably be better to avoid the inevitable casualties that must result from a struggle for fire supremacy in preference to the undoubted hazards of a night attack.”* (Field Service Regulations, section 135 (2).)

The night attack, therefore, like the use of envelopment, can only be regarded in a limited sense as a way of escape for the infantry arm from the difficulties of crossing the fire-swept zone. Yet there may be opportunities for assaulting in the dark, which, if let

slip, will be regretted. Hlangwane on the night before the battle of Colenso was held by but 800 Boers, exceedingly nervous as to their isolated position.<sup>1</sup> A night assault would almost certainly have carried it at a slight cost, and have placed the Natal Field Force in exactly the same position as it secured later, on the 20th February, after a loss of over two months in time, and of 3000 officers and men in casualties. Osaki, the commander of the Japanese 15th Brigade, by ill luck missed the opportunity of securing unopposed the Lo-ta-Shan on the night of the 12th-13th October, 1904, and had to expend many of his men's lives next day in wresting that hill from the Russian troops, which had re-occupied it in the early morning of the 13th.<sup>2</sup>

Opportunities, therefore, for night assaults must be carefully watched for. Their selection is a matter of nice judgment. But it must be accepted that they do not occur so frequently as to form any royal road of escape from the stupendous task of day attack. The day attack is normal, the night attack abnormal.

<sup>1</sup> *Official History, South African War*, vol. i. pp. 343-4.

<sup>2</sup> *Official History, Russo-Japanese War*, part v. pp. 115-117.

## CHAPTER XI.

### INFANTRY (CONTINUED).

THE spirit, objects, methods, and mechanism of infantry tactics are all so fully set forth in *Infantry Training*, 1911 (sections 120-169), that any attempt to deal with these subjects in detail in an unofficial publication would only involve useless, and indeed impertinent, repetition. Officers can hope for no clearer guide to the mastery of the principles of infantry leading in modern war than these instructions of the General Staff. Yet it may perhaps be of service to illustrate by historical examples a few of the salient points of these principles.

The experiences of 1870 proved finally the necessity of extended order for infantry in day attack. It is amazing, therefore, that the military forces of any great State should have failed to assimilate wholly that lesson. Yet one Russian Army Corps at least—the 6th Siberian—had yet to learn it thirty-four years later, and that bloodily on the battlefield. The spectacles of the Yuknov Regiment moving forward on the 12th October, 1904, to the attack of Lung-wang-chiao “in broad daylight, over a perfectly open plain, drawn up in two lines with the men shoulder

to shoulder," and being mown down at a range of 700 yards by the reserved fire of sixty-two guns and several thousand rifles,<sup>1</sup> and of the same corps with the Yepifan Regiment attempting two days later a similar advance (though this time in single rank) against Wu-chang-ying and Chang-Liang-pu, with a resulting loss to the former regiment alone of nearly 2000 men,<sup>2</sup> were indeed astounding, and need only be quoted as examples of the heavy penalty of defective peace training.

Even in the Russian army, however, such flagrant disregard of the conditions of the modern combat were exceptional instances. By the troops of all other great Powers lessons of the past had been earnestly studied. The first result of the 1870 experiences was an attempt to evolve regulation attack formations for infantry in extended order, which could be as rigidly practised in peace and adhered to in war as column and line formations were by Napoleon's and Wellington's armies. The battlefields of eastern France had proved the necessity for the division of attacking infantry into three echelons, firing line, supports, and local reserves. Yet the confusion, the intermingling of units, the disorder of those fights not unnaturally led to an attempt to re-establish an attack mechanism, to fix rigidly by regulation the relative strength of each echelon, as well as their intervals and distances. Theoretically this idea was attractive. Its aim—the elimination of the excessive

<sup>1</sup> *v. Official History, Russo-Japanese War*, part v. p. 80.

<sup>2</sup> *v. Ibid.* pp. 144-5.

disorder of 1870—was indeed legitimate, but it was soon perceived that in practice the method was radically unsound, for it ignored the fact that the use of ground had assumed a new importance with the new conditions of fighting—an importance which prohibited from henceforth any mechanical tactical drill, and demanded in lieu an intelligent flexibility and adaptability to environment. These latter conclusions were fully accepted in the British army before the outbreak of the South African war, and in the actions of that campaign the details of the formation in which the infantry commenced its attack were decided on the spot by its leaders and varied with the conditions of the ground and the task confronting them.

Thus at the commencement of the attack on Talana Hill the firing line of the leading battalion—the 2nd Royal Dublin Fusiliers—extended at an interval of ten paces. At Elandsplaagte the three companies of the 1st Devons, the first line of the frontal attack, occupied a frontage of 600 yards. At Belmont the 1st Scots Guards and 3rd Grenadier Guards advanced before dawn to the attack of the Boer position on Gun Hill, each with a firing line of four half companies, extended to five paces, the remainder of their four companies being in support similarly extended 200 paces in rear, the battalion reserve, the remaining four companies, moving in single rank at the same distance in rear of the support. In the same action, however, a half battalion of Yorkshire Light Infantry adopted a very different formation, attacking in waves of double companies extended at an interval

of eight to ten paces. The latter unit used the same formation with success when delivering its flank attack at Graspan. The Naval contingent and two companies of the Loyal North Lancashires on that occasion assaulted in front. The latter, widely extended, got home with the bayonet with but little loss, but the bluejackets and marines, originally extended at four paces, had somewhat closed in during the advance and suffered heavily.

At the battle of Colenso the advance of the 2nd Brigade, the only Aldershot brigade left intact after the break up of the 1st Army Corps, was made with two battalions in the first line, one in second and one in third. The two leading battalions—the 2nd Queen's and 2nd Devons—moved forward in columns of half companies at from fifty to eighty paces distance, each half company being extended at from six to eight paces interval. In this formation the advance reached the village of Colenso under a heavy fire with but slight loss.

During the Spion Kop operations, the 3rd King's Royal Rifles attacked in half battalions the Twin Peaks to the north of Potgieter's Drift, each half battalion taking one of those kopjes for its objective, and being formed :

*“1st line—Halves of two companies in firing line at 18 paces extension, supported at 200 yards distance by their complementary half companies at 15 paces extension. 2nd line—200 yards in rear of 1st line, two companies similarly disposed, at 12 paces distance.”*<sup>1</sup>

<sup>1</sup> *Official History, South African War*, vol. ii. p. 393.



The attack carried its objectives, which were held by 200 Boers.

These examples all represent attacks delivered across the open veld with little or no natural cover.

But for the hill and bush fighting during the operations on the right bank of the Tugela, which achieved the occupation of Monte Cristo, Cingolo, Hlangwane, and Gun Hill (14th-20th February) the formation generally adopted by the battalions of the 2nd Division was as follows :

*"The first line consisted of groups of scouts under a specially selected officer. From 300 to 400 yards in rear followed two companies in line, extended to about six paces ; about 300 yards behind these marched two more companies, similarly extended. The remaining four companies, under the battalion commander, brought up the rear, usually in column at 250 paces distance, each company extended to four or five paces."*<sup>1</sup>

This formation would appear, too, to have been more or less adhered to in the subsequent fighting on the left bank of the river, although the *Official History* is not clear on the point.

At Paardeberg the first line of the 13th Brigade, the 1st West Riding and 1st Oxfordshire Light Infantry, attacked the river-bed from the south, each with two companies in the firing line extended at ten paces interval. A distance of eighty yards separated the firing line from its supports, and the supports from its reserves. The brigade reserve—

<sup>1</sup> *v. Official History, South African War, vol. ii. p. 432.*

but a half battalion—followed 400 yards in rear. On the other hand, in the same action the leading battalion of the 18th Brigade—the 1st Welsh—was launched across the open against the eastern flank of the Boer trenches “in successive lines of companies with ten paces interval between the men.”<sup>1</sup>

At Poplar Grove, however, these two brigades, acting under the immediate orders of their Divisional Commander, deployed in a much closer formation.

*“Each brigade had two battalions in first line and two in support; the companies of the battalions were extended, one behind the other, at an interval of three paces between each man; the distance between the companies being about 100 yards. An interval of 300 yards was preserved between battalions in each line, the second line being deployed 400 yards behind the first. Each brigade, therefore, formed a double column of extended companies, the two columns having a total frontage of about half a mile and a total depth of over a mile.”*<sup>2</sup>

De Wet, outflanked by the Cavalry Division, did not await the infantry attack. This experiment in a divisional attack mechanism—the only one made during the war—was not therefore tested by actual fighting, but it would appear from the narrative of the action to have proved slow and cumbersome in manoeuvre. In the unforeseen battle of Driefontein, fought four days later, the 18th Brigade was, how-

<sup>1</sup> v. *Official History, South African War*, vol. ii. p. 133.

<sup>2</sup> v. *Ibid.* p. 198.

ever, permitted a much more flexible formation, the original extension being at four paces, the battalion commanders being allowed a free hand in the distribution of their companies, and the brigade reserves moving out freely to the flanks, as the attack developed and was pushed home.

Thus the experience of the South African war confirmed the conclusion that any hard and fast rules as to intervals of extension, distances, and of proportionate distribution between firing line, supports, and local reserves, cramps injuriously infantry leaders on the battlefield, and interferes with the proper adaptation of the attack to the circumstances of the ground to be traversed, to the description, accuracy, and volume of the hostile fire to be expected, and to the moral and the tactical methods of the enemy. Even distribution of the first line of the attack into firing line, supports, and reserves, although a normal method rarely to be departed from, was not found essential to success. The Boers had no such practice. Their attack on Nicholson's Nek was conducted without regard to it, and yet attained by intelligent use of the ground complete mastery of the defending force. The circumstances of the ground were, in fact, the chief factor in South Africa in the selection of infantry attack formations. The open plains of the high veld led (excepting only the case of Poplar Grove) to extremely wide extension; the broken terrain of the last fortnight's fighting for the relief of Ladysmith and the undulations of the Driefontein kopjes to closer

formations. Our General Staff, therefore, now prescribe that :

“In deciding on the formation to be adopted in battle the object in view and the ground are normally the most important considerations,”<sup>1</sup> and from this it follows, that “if the best use is to be made of the ground, the officers and fire unit commanders responsible for leading the movement should reconnoitre beforehand as much as possible of the line of advance.”<sup>2</sup>

The present regulations thus extend the responsibility for ground reconnaissance previous to attacking to sectional leaders while in no way relieving the higher commanders of that duty. The responsibility in fact rests on every commander from the Divisional General down to the non-commissioned officer in charge of a section, and is proportionate in each case to the size of his command ; each must endeavour to acquire a knowledge of the ground *before* making his plan of attack or of advance in conformity with the orders of his superior. This does not imply unlimited reconnaissance by every unit with a view to indefinite possibilities, but a specific examination of the ground to be traversed, after a specific duty has been allotted. The Divisional General has, for instance, been assigned by the Army Commander the task of taking from the enemy a particular position. The manner in which that task is to be effected is left to his discretion, and should only be decided on

<sup>1</sup> *v. Infantry Training*, 1911, section 125 (1).

<sup>2</sup> *v. Ibid.* section 126 (1).

after full and careful reconnoissance of the position as a whole. Brigadiers will then be similarly assigned by the Division General particular objectives, and must, either by personal reconnoissance or by the use of their staff, satisfy themselves as to the best manner of taking advantage of ground in the distribution of their battalions for the attack. The battalion commanders will similarly be allotted their objectives or tasks by their Brigadier, and will similarly take every opportunity for obtaining information which will enable them so to use the ground as to surprise the enemy, or in any case to obtain, if possible, cover for their men from his fire. And so too must company and sectional leaders, each in their more limited spheres, investigate the ground problem, and thus ascertain how best to carry out their duty.

This principle of universal, although proportionate, responsibility for ground reconnoissance was but little understood in the British army at the outbreak of the South African war. Reconnoissance was deemed a matter for the cavalry and staff. Peace manœuvres had accustomed infantry leaders to the use of contoured and accurate maps, which, drawn on a comparatively large scale, rendered elaborate examination of ground prior to attack a superfluous matter. The army, like a boy taught to swim by the help of bladders, learnt to rely too much on the accuracy of its maps, and, when required to operate in an imperfectly surveyed theatre of war, was at first at a loss how to make good that handicap.

Thus at Colenso, the critical battle of the first phase of the war, the British troops were committed to a plan of attack impossible of execution. The Irish Brigade, on whose success the whole plan depended, was ordered to cross the Tugela at a place where no ford existed. Hlangwane, the hill which commanded the Colenso bridges and lay then an easy prey to a small force, was ignored, and its importance not recognized. Systematic ground reconnaissance, such as that made by the Japanese before committing Kuroki's army to the passage of the Yalu, would have made both these mistakes impossible. It was not the injudicious use of frontal attack, but the neglect of reconnaissance, which caused victory to be missed in that first effort to relieve Ladysmith. Similarly, too, at the Modder, though the cavalry had reconnoitred to the front on the previous afternoon, the Brigadier of the Guards Brigade, when advancing to occupy the village, was still ignorant of the existence, close to his right flank, of the deep bed of the Riet, and attempted an envelopment of the enemy's left flank, which could not be carried out.<sup>1</sup>

The system adopted by the Japanese in the 1904-5 war made such mistakes as these impossible. Thus in the narrative of the attack on the villages of La-mu-tun and Lin-sheng-pu on the 14th of October during the battle of the Sha-Ho, we read that :

“ During the previous night *the usual reconnaissance* had revealed to the Japanese that (1) defensive works on the south side of Lin-sheng-pu were held by at

<sup>1</sup> *v. Official History, South African War*, vol. i. pp. 249-50.

least one battalion of infantry ; (2) the Sha-Ho was everywhere fordable by infantry and Lin-sheng-pu could be approached under cover of the banks ; (3) the country between Shu-lin-tzu and La-mu-tun was perfectly open.”<sup>1</sup>

“ The usual reconnaissance ! ” The words reveal a habit, to which may be attributed the extraordinary smoothness of the Japanese attacks, the absence of any element of surprise either from accidents of ground, or the unforeseen disposition of the enemy and the rarity of failure. The commander who can rely on obtaining such information as Oku thus received from the usual night reconnaissance on the 14th October has no need to wonder, as the Duke of Wellington is said to have wondered—“ What the other fellow is doing on the other side of the hill.” He will know, and can make his plan of attack with assured confidence.

The ground and the disposition of the enemy being thus ascertained, the Japanese had no difficulty in adapting their formations to actual tactical requirements. In the earlier part of the campaign they used extensions less wide than those generally adopted in South Africa, and this partly, no doubt, because the Japanese Commanders desired to retain a grip of their troops as long as possible, but chiefly because the ground, on which the actions were fought, up to and including the battle of Liao-yang, was either broken and rugged, or covered with the tall kaoling crops, affording complete concealment to infantry.

<sup>1</sup> *Official History, Russo-Japanese War*, part v. p. 141.

During this period, the frontage of attack allowed in the 2nd Army to each battalion was, as a rule, limited to 300 metres (*i.e.* 323 yards); after Liao-*yang* it was extended to 400 metres, or even to 500 metres.

In the zone in which the advancing infantry is liable only to artillery fire, lines of company columns at deploying intervals, often advancing with their sections in fours, were much used.<sup>1</sup> Occasionally the advance was made at the double, but more often in quick time. This formation was not, however, invariable. In the later battles the battalions, like the British infantry in South Africa, appear finally to have extended in skirmishing order on entering the zone of artillery fire. Thus, during the battle of Hei-kou-tai the 41st and 42nd Regiments were ordered by General Kigoshi, commanding the 5th Division, to attack the river-bed from Liu-tiao-kou to Lichai-wo-pang and the village in rear. The attack was organized in two wings, the 1/41st forming the right wing, and the whole of the 42nd the left. The other two battalions of the 41st were detailed as brigade reserve. The right wing (1/41) carried out the advance as follows :

At 3000 yards from the enemy's position Nos. 3 and 4 Companies each extended two sections at 5 yards interval as firing line ; the remaining sections,

<sup>1</sup> The Gordon Highlanders at Elandslaagte advanced under artillery fire in echelon of companies in sectional column at 60 paces interval, suffering but "trifling loss" from the Boer guns (*Official History, S.A. War*, vol. i. p. 165). *Infantry Training*, 1911, section 125 (3) now prescribes the use of "small shallow columns each on a narrow front such as sections in fours or in file," the interval between to be normally not less than 50 yards.



similarly extended, followed 150 yards in rear as supports; No. 1 and No. 2 Companies were in reserve, moving in columns of sections; No. 2 Company 500 yards in rear of No. 3's supports; No. 1, 50 yards to the right rear of No. 2. Falling snow concealed the advance up to 2000 yards. Coming under artillery fire at that point, the battalion lay down, and then continued its advance by company rushes of about sixty yards at a time.

At 1200 yards the firing line began to suffer from rifle and machine-gun fire, and was gradually reinforced by its supports. Later No. 2 Company prolonged the line to the right, and No. 7 Company (2/41) was brought up from the brigade reserve and echeloned 100 yards behind the right flank in column of extended sections, with a distance of 100 yards between sections. Meanwhile, from 1200 yards onwards, the firing line had progressed by sectional rushes.<sup>1</sup> No. 7 and No. 5 Companies were successively pushed up into the firing line, and No. 6 and No. 8 organized as local reserve. Each company in the firing line had now a frontage of about 200 yards. At 900 yards darkness overtook the attack. It was decided to halt and entrench, with a view to its resumption at daybreak.

The right wing—the 42nd Regiment—had advanced in similar formation, with two battalions in first line and the third in regimental reserve. The latter was

<sup>1</sup> Company rushes were used at this stage in the earlier battles, e.g. 2nd Guards Brigade's attack on Men-chia-fang during the battle of Liao-yang (*Official History*, part iv. p. 57).

still intact on the left rear of the left flank, when the wing had advanced to within 900 yards of the enemy, but the whole of the other battalions, supports and reserves had been absorbed into the firing line, each battalion now occupying a frontage of about 500 yards. This wing, too, halted and entrenched at nightfall.

During the attack the two regiments engaged lost 574 officers and men (killed and wounded). The incidence of these casualties illustrates the statement in *Infantry Training*, 1911, section 125 (2), that :

*“ At effective ranges troops advancing steadily and rapidly suffer less than when they remain lying down, even under moderately good cover.”*

The relative losses during advances and during halts were :

	During advances.	At halts.	Total.
41st Regiment - - - - -	18	76	94
42nd Regiment - - - - -	128	356	484
Total -	146	432	578

The proportion between casualties due to artillery fire and those due to machine-gun and rifle fire is, too, of interest, and may be worth quoting :

	Artillery fire.	Rifle and machine-gun fire.	Total.
41st Regiment - - - - -	3	91	94
42nd Regiment - - - - -	115	369	484
Total -	118	460	578

The most serious part of the task of infantry in crossing the fire-swept zone is therefore its passage through the last 1000 yards. There the rifle fire of the enemy will take heavy toll. The nearer the position is approached, the more deadly the stream of bullets issuing from it, unless that fire can be subdued. The subjection of the enemy's fire is thus the most important matter in the infantry advance. "An enemy"—it is true—"can seldom be driven from a good position by fire alone."<sup>1</sup> "The climax of the infantry attack is the assault."<sup>2</sup> Yet the assault "is made possible by superiority of fire."<sup>3</sup> "The attacking force must use fire to keep the enemy's heads down, and to demoralize him in order to be able to push on to close quarters."<sup>4</sup> To this end the attacking infantry must, wherever possible, seize and hold successive fire positions, from which the enemy's fire can be contested and further advance thus made possible.

These fire positions will, as a rule, be sought where natural cover is available, "but, if none exist, and the intensity of the hostile fire precludes any immediate advance, it may be expedient for the firing line to entrench itself."<sup>5</sup>

The digging in of the 41st and 42nd Regiments at Hei-kou-tai is an example of such entrenchment—an entrenchment made with a view to the resumption

<sup>1</sup> *Infantry Training*, 1911, section 122 (3).

<sup>2</sup> *Field Service Regulations*, part i. section 106 (5).

<sup>3</sup> *Ibid.*

<sup>4</sup> *Infantry Training*, 1911, section 122 (3).

<sup>5</sup> *Field Service Regulations*, part i. section 105 (6).

of the advance as soon as possible. Similarly, too, in the battle of the Sha-Ho, when the 3rd Japanese Brigade had in the early afternoon of the 11th October, effected a lodgment on the under features of San-cheng-tzu-Shan, but was unable to push further, until assistance could be obtained from the Guards Division; "at every point of the advance the men threw up shelter trenches, which in the brown soil, were extremely difficult to detect, and offered a poor target to the Russian gunners. So careful were they to run no needless risk that the British Attaché who watched this attack, reported that "the whole Japanese Army in front seemed to be underground."<sup>1</sup>

The brigade, however, only dug itself in, after an attempt to capture the main heights had proved that the slopes were too steep, and the opposing force too strong to carry them without further help. Perpetual recourse to the spade in the attack would destroy its morale, encourage the spirit of the enemy, and wreck whatever plan of offence may have been formed by supreme authority. Entrenchment by infantry, therefore, during an attack, "when it involves any diminution in the volume of its fire, is only to be employed if further progress has become impossible."<sup>2</sup> Careful distinction must, in fact, be made between the entrenchment of an intermediate fire-position during an attack, and the entrenchment of a hostile position after capture. The former is only to be undertaken when circumstances require;

<sup>1</sup> *Official History, Russo-Japanese War*, part v. p. 49.

<sup>2</sup> *Field Service Regulations*, part i. section 105 (6).

the latter is always essential, if there be danger of counter-attack.

"The advance of the firing line"—the General Staff declares <sup>1</sup>—"must be characterised by the determination to push forward at all costs . . . no half measures will succeed."

And so we find that, while in the Japanese army nothing was ever done carelessly or hastily, yet rapidity of movement was the main feature of its infantry attack,<sup>2</sup> a rapidity acquired by thorough peace training. The battle of the Sha-Ho presents at least two classic examples of brigade attacks in which systematic preparation was combined with the finest dash and gallantry, that of the 15th Brigade under Major-General Osaki on the Temple Hill (11th October), and that delivered by the 3rd Brigade (Major-General Matsunaga) on the Shao-ta-kou ridge on the following day.<sup>3</sup> The circumstances of both these attacks were extraordinarily similar. In both careful arrangements were made by the Brigadier for artillery preparation. In the attack on Temple Hill "the long straggling village of Ku-chia-tzu hid the Japanese advance from the Russians at the foot of the hill"—where they were holding in force a deep sunken road—"and was reached with very little loss at 4 p.m."

<sup>1</sup> *Field Service Regulations*, part i. section 105 (4).

<sup>2</sup> v. Lieut.-Colonel Haldane's admirable paper in *Reports from British Officers attached to the Japanese and Russian Forces in the Field*, from which the Hei-kou-tai example and other facts stated in this chapter have been extracted.

<sup>3</sup> *Official History, Russo-Japanese War*, part v. pp. 50-51, 297.

*"There the firing line halted, as if gathering strength to cross the 600 yards of bare stubble in front, while a terrific rifle fire was exchanged between the village and the sunken road. At 4.40 p.m. the first line started at a run straight for Temple Hill. Other lines followed in quick succession with an average interval of about three paces between the men. One halt only was made to fire while crossing the dangerous zone, and in a very few minutes the leading Japanese soldiers reached the nearest point of Temple Hill, and the whole line then dashed into the sunken road right on the top of the Russian infantry. Furious bayonet fighting followed and, as the setting sun lit up the western slopes, the whole mass, Russian and Japanese, rushed pell-mell up the hill towards the temple at its summit. . . . Once they were established on the hills, the Japanese lost no time in entrenching the position they had won."*

Similarly, too, the 3rd Brigade, in its attack on Shao-ta-kou heights, reached the village of Fu-chu-yao without drawing fire, and there took temporary shelter at 7 a.m. under the cover of its houses and trees. Then the Japanese artillery attempted the mastering of the enemy's artillery, but without complete success. *"At 11.30 a.m. General Matsunaga gave the word to advance. Immediately the men broke from behind cover and raced across the 600 yards of perfectly open ground between Fu-chu-yao and the shelter of the hills and ridges on the far side. . . . Twice or thrice only did the assailants halt as they crossed the fire-swept zone, and on reaching the other side, without*

*halting to re-form, dashed straight at the enemy on the nearest ridge."*

The close similarity of tactics adopted in these two attacks could have been no mere accident. Both the brigades engaged belonged to the same division—the 2nd. The rapidity of these attacks, the determination and the power of endurance displayed by the men, must be attributed in no little degree to the uniformity and thoroughness of their training. In both advances the most notable point is the extraordinary length of the rushes—in the first only one halt in the last 600 yards—in the second only two or three. The Committee of Imperial Defence, in commenting on this, draw attention to the comparatively small loss resulting from this method of crossing perfectly open ground.<sup>1</sup> On the other hand, *Infantry Training*, 1911, section 125 (6), deprecates "long rushes made without adequate object"—e.g. to reach good cover—pointing out that "such rushes may fatigue the troops and make their fire unsteady, besides affording the enemy a relatively easy target." No hard and fast rules are prescribed, but it is advised that:

*"At close infantry ranges under heavy fire, advances should be made very rapidly, and should usually be limited in duration."*

The long rushes of Temple Hill and Shao-ta-kou were, in fact, exceptions to the usual Japanese methods of assault. Like the charge of mounted men delivered on infantry in position during the last phase

<sup>1</sup> v. *Official History, Russo-Japanese War*, part v. pp. 51, 297.

of the South African war, they cannot be regarded as a normal type of tactics. The ordinary Japanese rule was identical with our present practice of diminishing the length of the rush as the enemy's position is approached and his fire grows more accurate and intense. Thus under artillery fire, when rushes were employed, they covered 100 yards or more. In the rifle fire zone the limit of rush was at first about sixty yards, but became shorter and shorter, as the distance from the enemy diminished and his aim quickened. Each advance was made at top speed, the company, section, or squad ordered to start dashing forward simultaneously, and at the end of the rush throwing themselves on the ground as if one man. Long halts were avoided. They were found, as we have seen, to increase losses and were, moreover, considered to damp the ardour of the attack.

The Japanese practice was also in conformity with our present regulations in reducing the strength of each rush as the enemy's position was approached—the further from the enemy the larger the body that rushed simultaneously. At first the whole firing line, then, as the line became strengthened with reinforcements, sections; later squads. Finally, about 300 yards from the enemy, it at times was found necessary for officers and men to creep forward individually, and thus build up a new fire position. This latter process, however, our *Infantry Training* points out, checks the rate of progress very considerably, and should be regarded as an exceptional method “only to be employed when it is not possible to gain ground



in other ways.”<sup>1</sup> As an instance of the sort of exceptional circumstances which justify the adoption of this method, may be quoted the case of the reinforcement of the 33rd Regiment in the attack delivered by the left wing of the 3rd Japanese Division on Yen-tao-niu-lu on the 11th October, 1904. The right of that regiment was without infantry support, and was believed to be in some danger.

“At 8.30 a.m., with great difficulty and with heavy loss, the 1st battalion of the 6th Regiment forced its way into the firing line. So terrific was the hail of bullets which greeted the battalion as soon as it attempted to move, that section rushes were abandoned, and the men were compelled to cross the fire-swept zone in twos and threes as opportunity offered.”<sup>2</sup>

Fire direction and fire control have been studied very closely in the British service, since the abandonment of the volley system in the South African war, and are no longer regarded as the whims of Hythe specialists, but as essential factors of infantry tactics. The reports of spectators of the Manchurian battle-fields do not indicate that the principles now set forth in *Infantry Training*, section 123, had been fully mastered in the Japanese army, still less in the Russian. But in the former, the germs of their principles may be traced. Fire was not commenced except by order of the battalion commander. Targets were named by sectional leaders under the direction of the officer commanding the company.

<sup>1</sup> *Infantry Training*, 1911, section 125 (8).

<sup>2</sup> *Official History, Russo-Japanese War*, part v. p. 83.

Independent fire was always used. Long-range fire was deemed of little use, and was considered a delay to the advance. Japanese infantry officers were ordered to reserve the fire of their men until the 800 yards range was reached, and seldom fired over 1000 yards. On the other hand, a Russian company commander,<sup>1</sup> in recording his experiences of the war, is of opinion that collective fire may be opened with effect at 2700 paces, and quotes, as instance, his own company firing sectional volleys at that range at a Japanese battery. The instance does not, however, do more than prove that the company succeeded in attracting the attention of the enemy. The conclusions, therefore, of the General Staff that :

“Beyond 1400 yards the fire of even large and well-controlled units of infantry has seldom much effect upon the decision of the struggle for superiority of fire,” appear well borne out by the experience of recent wars. The main object of fire in the attack is to cover and make possible the advance into the enemy's position by masking his fire. The mere letting off of a large number of rifles vaguely in his direction will not effect this ; on the contrary, not only does it result in waste of ammunition, but the small loss resulting helps to encourage the enemy. There may, of course, be occasions on which indirect fire can be used effectively to search an area of ground known to be occupied by invisible defenders. But in such cases the fire needs most careful control. To attempt “to make the volume of the fire compensate

<sup>1</sup> *v. Revue militaire des armées étrangères*, January, 1906.

for its want of accuracy," as has been suggested since the Manchurian war by a Russian officer, cannot be sound. Indeed, he himself relates that the unaimed bullets of the Japanese passed over the heads of the Russian company columns during a night attack at the battle of the Sha-Ho "like swarms of bees" without inflicting any great loss.<sup>1</sup>

Close fire control is in fact necessary for three reasons: (i) the need for obtaining actual effective results, which will facilitate our own advance in attack, or in defence stay the enemy's advance; (ii) the loss of morale amongst men allowed to fire hurriedly without aim or target; and (iii) the necessity of husbanding ammunition. The last is a matter of special importance to an army liable to be employed over-seas and to be engaged in action, before the process of disembarkation has been wholly completed. When Oku attacked the Nan-shan position, only one infantry and one artillery ammunition column had as yet been landed. The total amount of ammunition for the moment available—not merely on the battlefield—but *in the theatre of war*, for his army was therefore but 198 rounds per gun and 180 rounds per rifle. The average expenditure per gun in the battle was 174.50 rounds. The expenditure of small-arm ammunition was considerably less, viz. only 76 rounds per rifle. Yet the 4th Division fired 1,110,886 rounds, or an average of over 110 per rifle.<sup>2</sup> The

<sup>1</sup> v. the précis of Captain Soloviev's observations in the *Revue militaire des armées étrangères*, January, 1906.

<sup>2</sup> v. *Official History, Russo-Japanese War*, vol. i. p. 451.

result of the battle was, for a long time, it will be remembered, doubtful. If the attack had failed, and the Russian forces available in the Kuan-tung Peninsula had been used after the battle for a vigorous counter-stroke, the situation of Oku's army, left with only twenty-five rounds per gun and 100 rounds per rifle, would have been critical. Yet it is evident that in the Nan-shan fight much care was taken to control infantry firing, for an average expenditure of but seventy-six rounds during twelve hours' desperate fighting is a remarkable contrast to the 521·8 rounds per rifle expended by the 17th Brigade at the battle of Te-li-ssu and on the previous day,<sup>1</sup> an expenditure which in the British service would more than have exhausted the total supply of small-arm ammunition maintained with the field army.<sup>2</sup>

The right use of reserves in both attack and defence is perhaps in modern war the greatest test of a commander's tactical judgment and ability. *Infantry Training*, as to this, remarks :

*"During the fight the commander of a considerable body of infantry influences the course of the action chiefly by the employment of his reserve."*<sup>3</sup>

The discussion of this vital question may, however, well be deferred to the consideration of battle tactics of the three arms combined. It must suffice here to note that the Japanese Staff were wont in Manchuria to dispense both with large local and large

<sup>1</sup> *Official History, Russo-Japanese War*, vol. i. p. 457.

<sup>2</sup> *v. Expeditionary Force, War Establishments*, 1913, p. 5.

<sup>3</sup> *Infantry Training*, 1911, Section 121 (2).

general reserves, either trusting to the passive attitude of the enemy, or deeming the containing power of the rifle sufficient to allow small bodies to beat off counter-attacks. Their object was to gain victories, not to stave off defeat, and to win they were ever eager to throw in their last man for the assault.

There were those who deduced from the experiences in South Africa, that the assault, or at least the assault with the bayonet, was a thing of the past, a scrap-heaped manœuvre. Yet the southern edge of Wagon Hill was held by the Boers all day that 6th of January until cleared by the bayonet charge of the Devons. The Boer trenches on Hart's Hill were carried at the point of the bayonet by the 4th Brigade. General Stephenson's battalions assaulted with the bayonet the Driefontein kopjes. The Boers, it is true, were not so armed, but, excepting only Nicholson's Nek, the Boers achieved success in not a single offensive attack during the first phase of the war. The Manchurian campaign showed over and over again that the bayonet was in no sense an obsolete weapon, and that fire alone could not always suffice to move from a position a determined and well-disciplined enemy. The conception that close fighting in daytime was at an end, and that the mere pouring in of fire at effective range must compel one or the other side to give way, proved to be fallacious. The war, in fact, established that an attack may reach to within "a score of yards" of the defender's trenches, as a battalion of the 3rd Japanese Division did at Ta-

shih-chiao,<sup>1</sup> or within stone-throwing distance as those three gallant regiments of 1st East Siberian Rifle Division did at Te-li-ssu<sup>2</sup> and the Japanese Guards at Chien-Shan,<sup>3</sup> and yet fail. Call to mind the last few minutes of Okasaki's attack on the Lo-ta-shan (13th October, 1904), and note how critical the situation was, how doubtfully the pendulum swung after his foremost companies had reached to within a few yards of the Russian trenches—"The artillery fire was stopped, and the decision was left to the infantry. A desperate fight raged for ten minutes, while General Okasaki and his staff waited for the result. Some men used the bayonet, others emptied their magazines, and when more orthodox methods failed them, hurled stones into their opponents' faces. As usual, the Russians fought with grim determination. Nothing could have exceeded their valour. At one time they drove their assailants some yards down the slope, and for a few seconds it appeared to the anxious onlookers on Temple Hill as though, after all, the attack was doomed to failure. Another effort and the Russians might have gained the day, but at the critical moment a few of the Japanese, seizing a favourable opportunity, again darted up the slope. The rest followed, and the position was won."<sup>4</sup> The assault then is even of more importance than the attainment of fire mastery which antecedes it. It is the supreme moment of the fight. Upon it the final issue depends. Yet

<sup>1</sup> *Official History, Russo-Japanese War*, vol. i. p. 209 (? 289).

<sup>2</sup> *Ibid.* vol. i. p. 191.

<sup>3</sup> *Ibid.* part v. pp. 113-114.

<sup>4</sup> *Official History, Russo-Japanese War*, part v. p. 117.

the choice of the moment for its delivery is difficult, for the right moment depends on psychological conditions; not easy to gauge, the relative ardour of the attack, the relative depression of the defenders, when both have suffered heavily, both are exhausted, and but a slight matter will turn the balance of the scales.

*“The impulse for the assault must therefore often come from the firing line and it is the duty of every commander in the firing line who sees that the moment for the assault has arrived, to carry it out and for all other commanders to co-operate as soon as possible.”*<sup>1</sup>

There are occasions when the impulse for the assault must come from the rear. Then every available man must be thrown into the final coup. There are others when, as at Temple Hill, or as at Elandslaagte, the position can be carried by one smooth rush or one continuous and regular series of rushes. Yet the modern infantry fight ever tends to increase in bitterness and intensity, and the experience of Lo-ta-shan will often be repeated.

In the examples which have been quoted of infantry attacks delivered during the Manchurian campaign it will be observed that mention has only once been made of any repetition of that great confusion and intermingling of units which characterized the infantry fights of the Franco-German war. The night attack of the 4th Army on San-kuai-shih-Shan is, in fact, the only occasion on which the Committee of Imperial Defence note the recrudescence of that feature in the ranks of the Japanese army. It is

<sup>1</sup> *Field Service Regulations*, part i. section 106 (5).

no doubt perfectly true that, as *Infantry Training*, 1911, section 129 (8) points out, the intermingling of battalions, companies, and sections in battle is still inevitable. Yet the study of the battles of Liao-yang and the Sha-Ho tends to the conclusion that the Japanese, notwithstanding this intermingling of minor units, did succeed in avoiding the chaotic breaking up of higher organizations, which was the main defect of the German attack at Woerth. Brigades were certainly kept generally intact. Indeed, many of the Japanese attacks delivered were purely brigade attacks, receiving only, at the best, indirect assistance from the rest of the division. Moreover, the internal organization of the brigade was so little destroyed that its re-organization after the assault took but a short time, and readiness for further action were quickly regained.

An astonishing instance of this is to be found in the achievements of the 3rd Japanese Brigade (Matsunaga's), which, in fifty-two consecutive hours (11th to 13th October) during the battle of the Sha-Ho, fought five severe engagements, besides marching the whole of one night in pouring rain. It is impossible to conceive any brigade, fighting under the Woerth system, or rather lack of system, being capable of continuous efforts such as these. In the Russian army, it is true, the higher organizations were constantly broken into, but this breakage was due—not to the consequences of the battlefield—but to bad staffing, and to the fragmentary use of Kuropatkin's general reserves for the piecemeal reinforcements of



this and that portion of his battle-line. The Manchurian campaign seems, therefore,—at any rate so far as regards the operations of the Japanese infantry,—to indicate that chaos and confusion are not unavoidable evils in the attack, and that the higher organizations and, to a limited extent, higher control can be preserved. In this matter the Japanese had, however, an advantage to which we cannot attain in the permanent sub-division of their infantry brigades in two regiments, each of three battalions. Yet even without this, it should be possible to keep intact in battle the brigade organization. Indeed, in South Africa, although higher units were constantly broken up for other reasons, the long and bitter struggle for Hart's Hill (23rd-28th February) appears to have been the only instance of brigade commands being seriously intermingled and confused on the battlefield.<sup>1</sup>

The difficulties of the attack will have made clear the strength of the defence in modern war. Its weaknesses have been in part traced, but will be considered again later, together with the occasions on which a defensive attitude is unavoidable or justifiable, and the general dispositions for infantry acting on the defensive as well as those of the other two arms. It will suffice for the present, to note first, that the strength of the defence is due to the great containing power of the modern rifle, and secondly, that this containing power, though much affected by ground, is not wholly dependent on it.

<sup>1</sup> v. *Official History, South African War*, vol. ii. p. 505.

With a perfectly open field of fire, as before St. Privat, before the Modder River village, on the river bank at Paardeberg, on "the perfectly open plain," which intervened on the 11th October, 1904, between the 10th Japanese Division and San-kuai-shih-Shan, and led to the decision "not to make any attempt to cross the valley until after sunset,"<sup>1</sup> that containing power is at its maximum. The entrenchments at the foot of Magersfontein Hill, on the edge of the river-bed at Colenso, on the northern or retired crests of Rangeworthy Hill and Hart's Hill, show how thoroughly the Boers appreciated this in adopting their defensive dispositions to the ground. Majuba, Nicholson's Nek, and Spion Kop are pregnant examples of the difficulty of holding precipitous and broken ground affording cover to an attack. Kuroki and Nodzu, with comparatively little difficulty, forced the passes of Mo-tien Ling, Chiao-tou, Yang-tzu-Ling, Yu-shu-Ling, Hsiu-yen, Fin-shiu-Ling and Hsi-mu-cheng in their movement northward prior to the concentration at Liao-yang.

Yet General Sir Ian Hamilton, who accompanied Kuroki's army throughout those operations, recorded the opinion that "mountains lend themselves to delaying operations by the weaker force,"<sup>2</sup> an opinion fully justified by the repeated repulses of Stackelberg's and Rennenkampf's troops in their attacks on Pen-si-hu, Ta-Ling, and Tu-men-tzu-Ling during the three days' fighting 11th-13th October.

<sup>1</sup> *Official History, Russo-Japanese War*, part v. p. 33.

<sup>2</sup> *v. Staff Officer's Scrap-Book*.

The aggregate Russian force available for those attacks was no less than 58 battalions, 122 guns, and 28 squadrons; on the Japanese side, but 15 battalions and 30 guns held a front of eight miles. There were, it is true, defects in the conduct of the attack. The Russian staff neglected to reconnoitre, and were unaware that the Japanese left was *en l'air*. The orders issued to the various columns were vague, and failed to ensure co-operation and mutual support. The attacking troops were inexperienced in mountain warfare, and loth to commit themselves to difficult ground. In a country "where every movement was confined to narrow uncertain paths,"<sup>1</sup> it was not easy to make superiority in numbers tell. Yet the splendid defence of the 12th Division and Umezawa's brigade, isolated in small detachments, and fighting against desperate odds, not only reflects eternal honour on those units, but shows that magazine rifles may enable a well-handled weaker force to thwart a stronger from advancing up ravines and precipitous hill-sides, as well as over smooth glacier-like plains.

The most astonishing episodes of that gallant defence were the retention of the village of Pen-si-hu and of an advanced fort a thousand yards in front of the main line of the Japanese. The latter, garrisoned at first but by three sections of infantry and six mountain guns, was attacked at 9 a.m. on the 11th of October by two columns, made up of the 33rd East Siberian Rifle Regiment (four battalions

<sup>1</sup> *Official History, Russo-Japanese War*, part v. p. 41.

strong), some infantry of the 3rd East Siberian Rifle Regiment, two batteries, and six mortars. By 1 p.m. the Russian attack had made good its ground to within half a mile of the Japanese trenches. The outpost was then gradually reinforced to a strength of two companies and one section. But though the attack was opposed by no more than this little detachment of but one-eighth of its own strength, and was supported by heavy artillery fire, it was stayed at nightfall 600 yards from its goal.<sup>1</sup> At Pen-si-hu the attack commenced on the 9th and terminated on the 12th October. A weak battalion of the 39th Kobi Regiment was at first its sole garrison against Rennenkampf's and Liubavin's very superior forces; at the end of the fourth day of its task, the battalion had but eighty unwounded effectives.<sup>2</sup>

From these glorious examples it may be deduced that no duty, however difficult, should be regarded as impossible by well-trained infantry of good morale and discipline. Modern war, indeed, demands the highest standard from infantry, not only in training and battle discipline, but also in moral and physical powers of endurance. The standard of training, although rapidly rising, is not perhaps so difficult to attain as that required from the sister arms. But it is indisputable that in battle discipline the foot soldier is subjected to a much severer task than his cavalry and artillery comrade, and that upon his physical and

<sup>1</sup> *Official History, Russo-Japanese War*, part v. pp. 42-3.

<sup>2</sup> *Ibid.* p. 104.

moral energies is made the heavier call. There are occasions when both cavalry and artillery are called upon for supreme sacrifice in the interests of the infantry. Bredow's two regiments, the 7th Cuirassiers and 16th Lancers, won imperishable renown by incurring at such a moment in the battle of Mars la Tour losses of 39 and 35 per cent. of their strength of officers and men.<sup>1</sup> At the battle of Liao-yang, to cover the retirement of the 3/23rd East Siberian Rifle Regiment from an advanced post on the southern slopes of the Tsao-fan-tun heights, the 3rd Battery of the 6th Russian Artillery Brigade came into action in the open some 600 yards from the enemy, and there remained throughout the day, although at the end but one gun could be served.<sup>2</sup> At Lombard's Kop the 13th and 53rd Batteries R.F.A. covered, "under a hail of bullets" and a very heavy cross artillery fire, the retirement into Ladysmith of the British infantry.<sup>3</sup> Cavalrymen and gunners have again and again shown themselves ever ready for such sacrifices. Yet the main portion of the price of victory must be paid by infantry; and upon the infantry falls by far the heavier share of actual work. The physical and moral strain of this incessant work is indeed a greater tax than the actual losses. Heavy though the latter are in modern war—709 officers and 7923 men of the Prussian Guards Corps at St.

<sup>1</sup> *Official History, Franco-German War*, Clarke's translation, vol. i. appendix, p. 140.

<sup>2</sup> *Official History, Russo-Japanese War*, part iv. p. 60.

<sup>3</sup> *Official History, South African War*, vol. i. p. 184.

Privat, 35 officers and 982 men from the Prussian 46th Regiment at Woerth, 72 per cent. of the officers of the 1st Inniskilling Fusiliers, and 27 per cent. of the men during the operations for the relief of Ladysmith between the 14th and 27th February, 546 killed and wounded from one Japanese battalion—1/34 Regiment—on the 31st August, 1904, and on the same day in the 3rd East Siberian Regiment a loss of 55 per cent. of its officers and 28 per cent. of its men—they do not try and test to the utmost limit the powers of human endurance, so much as continual day and night marching and fighting, fighting and marching—the strain of being under fire for many hours and even days—of lack of sleep and food—of dazed mind and worn-out body, which falls on the infantry soldier in a modern battle.

Take the concrete case of the work done by Matsunaga's Brigade—the 3rd Japanese—during three consecutive days of the Sha-Ho struggle. At 5 a.m. on the 11th of October it was launched for the attack of San-cheng-tzu-Shan. After a series of desperate encounters at close quarters, it succeeded at 1.40 p.m. in effecting a lodgment in the Russian outpost line. There shelter trenches were thrown up and nightfall awaited under fire.<sup>1</sup> At 7 p.m. the attack on the main position held by the 4th Siberian Corps on San-cheng-tzu-Shan commenced. After six hours' severe night fighting the hill was carried, but with a loss to Matsunaga of over a thousand men.<sup>2</sup> The

<sup>1</sup> *Official History, Russo-Japanese War*, part v. pp. 48-9.

<sup>2</sup> *Ibid.* p. 69.

brigade had now been under continuous fire for twenty hours, and had fought practically two actions. It was given but six hours to reorganize in the darkness, feed, and snatch a few moments of sleep. At 7 a.m. on the 12th it moved forward from the hardly-won hill to attack a fresh position on the heights near Shao-ta-kou. Assembling under cover of the village of Fu-chu-yao, Matsunaga's battalions were thence launched for that famous assault, in which, as if fresh from barracks, they raced over the last 600 yards of the fire-swept zone, and dashed straight at the enemy.<sup>1</sup>

This fight finished at 2 p.m. The brigade received immediate orders to march eastward to the assistance of the 12th Division, but with the consent of the Army Commander the start was postponed until nightfall, not because the men were too exhausted, but for tactical reasons, the route designated being exposed to the enemy's artillery fire. At 7 p.m. the battalions set out. Heavy rain fell. The ground became very slippery and heavy. The maps of the Staff were useless. The column missed its way, and marched on right through the night. At 5 a.m. on the 13th, Matsunaga's advanced guard at last reached his objective, the foot of the formidable mountain pass of Chao-hsein Ling, in which a strong Russian force lay entrenched. A heavy thunderstorm raged, and the Japanese guns were not yet up. Yet, having by aid of the lightning reconnoitred the pass, the Brigadier at 6.30 a.m. sent forward his infantry

<sup>1</sup> *Official History, Russo-Japanese War*, part v. p. 97.

to its assault. The attempt failed. At 8 a.m. it was renewed, two batteries having meantime come up and bombarded the enemy's trenches. The task was again found to be impossible, and had reluctantly to be abandoned. But even so the brigade was not yet to rest, for at midday its left was menaced by a Russian advance from the Hsin-kai-Ling, necessitating a portion of the brigade reserve being moved out to oppose this threat by occupying the hills to the north.<sup>1</sup> Thus in fifty-five consecutive hours Matsunaga's men assaulted strongly entrenched positions five times, had but eleven hours in all for rest and food, and during the whole remaining forty-four, were either fighting, marching, or under fire.

The long duration of modern battles, the increasing frequency of night operations, involving continuous spells of night and day marching and fighting, and the increasing importance of mobility in strategical as well as tactical combinations, have all enhanced the necessity for the thorough training of the infantry soldier "to fit him mentally and physically to do his duty in war."

From the examples which have been quoted from modern war, "it may be deduced that the preliminary steps necessary to attain this object are :

- (i) *The development of a soldierly spirit ;*
- (ii) *The training of the body ;*

<sup>1</sup> v. *Official History, Russo-Japanese War*, part v. pp. 98, 109-110 ; v. also p. 246, vol. ii. *Staff Officer's Scrap-Book*. Sir Ian Hamilton states that the brigade continued its assaults on the pass until 9 p.m. The C.I.D., however, hold that nothing more was done after the midday occupation of the hills to the north.



(iii) *The training in the use of the rifle, bayonet and spade*” ;

(*Infantry Training*, 1911, section 2) ; and especially does the experience of all recent campaigns show that the first of these steps, the development of a soldierly spirit, is essential to help the infantry soldier. “ *To bear fatigue, privation, and danger cheerfully ; to give him confidence in his superiors and commanders ; to increase his powers of initiative, self-confidence and self-restraint ; to train him to obey orders, or to act in the absence of orders for the advantage of his regiment under all conditions ; to produce such a high degree of courage and disregard of self that he will use his weapons in the stress of battle coolly and to the best advantage* ” (*Infantry Training*, section 3).

A soldierly spirit is in truth the key-note, the foundation stone of all training. Without it we build but on sand. With it, an army can achieve all. It was that spirit which rendered the stubborn thin red line invincible in the Peninsula and at Waterloo, and won its recognition as the best infantry in Europe. It was that spirit which enabled the British regiments despatched by a careless nation to a distant theatre of war without transport, supplies, clothing, hospital or trained staff, to endure through that terrible winter in the Crimea, and attain final victory. That spirit conquered India in the dark days of the mutiny. It inspired Sir R. Buller's troops to disregard all their checks and disappointments, and made possible the relief of Ladysmith. It enabled the weary and war-worn British infantry to do that dullest of all work,

blockhouse duty, cheerily and uncomplainingly throughout the long dragged-out months of the last phase of the South African war.

And so it is well that "*the soldier should be instructed in the deeds which have made the British Army and his regiment famous, and, as his intelligence develops, this instruction should be extended to simple lessons, drawn from military history in general, illustrating how much depends on the qualities which a soldierly spirit inspires*" (*Infantry Training*, 1911, section 3).

## CHAPTER XII.

### MACHINE GUNS.

"The machine gun possesses the power of delivering a volume of concentrated rifle fire, which can be rapidly directed against any desired object. Rapid fire cannot be long sustained owing to the expenditure of ammunition involved, and it is therefore necessary that the movements and fire action of these weapons should be regulated so as to enable them to gain their effect by means of short bursts of rapid and accurate fire whenever a favourable opportunity arises."—*Field Service Regulations*, part i. section 7.

EXCEPTING air-craft, machine-gun detachments are the most modern of fighting units. Yet the machine gun is not so recent an invention as to be void of war experience. For more than forty years it has been tested in almost every form of land fighting, with results varying, as might be expected, with the mechanical improvement of the weapon and the gradual accumulation of data, sufficient to build up the principles of its tactical employment; but those results have assured the recognition of its value in every organized army in the world. Yet its first notable trial on service proved a grievous disappointment. The mitrailleuse in 1870 fell lamentably short of the French Staff's expectations, but the causes of its failure are clear. Mechanically the "Reffye"

was a weapon inferior to the Maxim, the Schwartzlose, the Hotchkiss or the Puteaux of the present day. It fired but 125 rounds a minute. It was mounted on a cumbersome artillery carriage. But it was still more handicapped by the erroneous ideas of the French Staff as to the tactical rôle of machine guns, and by the very defective training of officers and men in their use.

The French shrapnel of that day (*obus à balles*) was only effective between the range of 550 and 1350 yards. But the rifle was beginning already to dominate the artillery at that range. The Reffye gun was therefore invented with the hope of providing a substitute for shrapnel at a range immune from hostile infantry fire. It was in fact "intended to do the field gun's work, except at (what were then) extreme field artillery ranges (2800 yards and upwards), in which case the ordinary gun with common shell (time or percussion) alone was used."<sup>1</sup> But even if it had been mechanically fit for such duties, the mitrailleuse's chance of success would have been gravely impaired by the lack of officers and men trained to its use. With fatal lack of judgment it was deemed more important to preserve the secrecy of the new invention than to provide trained detachments. Nine-tenths of the officers and men to whom the Reffye gun was entrusted at the outbreak of the 1870 war had never seen even one round fired from it in peace.

The result of all this misconception and bad judg-

<sup>1</sup> *Encyclopaedia Britannica*, 11th edition, vol. xvii. p. 239.

ment was that the mitrailleuses attempted gallantly an impossible duel with the Prussian artillery and, presenting a magnificent target when massed in the open, were put out of action with consummate ease. Yet, when disregarding the intention of its inventor, the new weapon was used against hostile infantry, it did good work in the repulse of the 38th Prussian Infantry Brigade at Mars la Tour, in the narrative of which it is mentioned with respect by the German Staff. Again, later on in the war, when in January, 1871, in pursuit of General Chanzy, Prince Frederic Charles' army advanced into the well-fenced, well-wooded and closely cultivated valleys and small plateaux lying between the Loire and Sarthe—a district much resembling in its topographical features parts of Surrey and Hampshire—the German Staff record that “the mitrailleuses were in their true element and became a dangerous weapon in the narrow passes.”<sup>1</sup>

Nevertheless, the fact remained that the mitrailleuse had failed to achieve the object for which it had been designed. Thus the possibilities indicated by its usefulness in a less ambitious rôle came to be disregarded, and machine guns generally fell for many years under the ban of the general staffs of continental armies.

The British naval and military authorities were more far-seeing. The Gatling gun, which had been given some slight trial in the American Civil war, the Gardner, and the Nordenfeldt were successively adopted, but finally superseded in the army in 1889,

<sup>1</sup> v. *Franco-German War*, Clarke's translation, part ii. vol. ii. p. 159.

and in the navy in 1892 by the Maxim. Great Britain's small wars afforded, in fact, many opportunities of testing the value of machine guns under conditions which, in some respects, were particularly favourable. There were *contretemps* occasionally. At Abu Klea a Gardner gun, run out some twenty yards outside the square, jammed, and thus caused the loss of nearly half the naval brigade, who stuck gallantly by the gun until swept back into the square by the rush of the enemy.<sup>1</sup> At Tamai the Arabs' charge caught two Gardner guns before they could come into action, and inflicted severe loss on the detachment.<sup>2</sup> But at other actions in the Sudan, in Rhodesia, in West and East Africa, and on the north-western frontier of India the machine gun rendered valuable service. Thus,

*"During General Hunter's reconnaissance of the Atbara zariba four days before the attack on it was delivered, the enemy's horsemen moved out in great strength and endeavoured to surround the force. The fire of the four machine guns, however, proved extraordinarily effective and kept the foe from charging home. They fired 4000 rounds."*<sup>3</sup>

Fifteen years earlier machine guns had done similar notable work in the fight near Fort Victoria, when the troops of the British South Africa Company under Major Patrick Forbes broke once and for all Lobengula's impis, and secured Matabeleland for British settlers.

<sup>1</sup> *v. Official History, Sudan Campaign*, vol. ii. p. 19.    <sup>2</sup> *v. Ibid.* p. 205.

<sup>3</sup> *Small Wars*, by Colonel C. E. Callwell, 3rd edition, p. 441.

*“ Meanwhile marksmen outside the laager had become engaged with the enemy, but they fell back as the Matabele swept forward. Then the machine guns got to work. The Matabele presented a wide front and they were struck down by scores as they got well within range. But they did not falter until they had reached the nearest wagons. Then the havoc wrought by every Maxim that could be brought to bear proved too much for their valour. They swerved and then fell back, but not in disorder. . . . In the third attack on one laager the enemy broke and fled at the first taste of the Maxims, impelled by a wild desire to find cover from the destroying hail.”*<sup>1</sup>

In the 1898 American campaign in Cuba machine guns rendered valuable assistance to the attack. A battery of Gatlings was attached to Roosevelt's famous Rough Riders during the fight round Santiago. Colonel Roosevelt in his narrative of the exploits of that corps describes how much “ the peculiar drumming sound ” of these guns cheered his men when under heavy fire, and notes that the officer in charge, Lieut. Parker, “ thrust them forward into the extreme front of the fighting line,” handling them in that situation “ with much effect.”

*“ Indeed the dash and efficiency with which the Gatlings were handled by Parker was one of the most striking features of the campaign ; he showed that a first-rate officer could use machine guns on wheels, in battle and skirmish, in attacking and defending*

<sup>1</sup> Quoted in Lieut.-Colonel Rogers' lecture on “ Machine guns up-to-date,” *Journal of R.U.S.I.* vol. xlviii. pp. 1036-7.

*trenches, alongside of the best troops and to their great advantage."*<sup>1</sup>

In the South African war, however, although both sides brought machine guns into the field, their value was not well exemplified, and this for two reasons. The open veld but rarely afforded cover for machine guns, still less any chance of concealment; there was thus but seldom an opportunity for surprise fire, while at Rietfontein,<sup>2</sup> the Modder River,<sup>3</sup> and Paardeberg<sup>4</sup> it was found that Maxims thrust forward in the firing line without cover and within effective range of the enemy were in a very short time silenced and rendered useless by the whole of their detachments being shot down. Moreover, the excessive extensions, adopted by both British and Boers reduced to a minimum the chances of a good target for machine guns. The machine gun is, in fact, *par excellence* the weapon of opportunity, and in that campaign the conditions were singularly unfavourable for opportunities, though carefully watched for.<sup>5</sup>

In Manchuria the conditions were very different. The broken mountainous country of the eastern side of the theatre of war, the high kaoling crops, which

<sup>1</sup> *The Rough Riders*, by Theodore Roosevelt, p. 147.

<sup>2</sup> *v. Times' History of South African War*, vol. ii. p. 205.

<sup>3</sup> *v. Official History, South African War*, vol. i. p. 251.

<sup>4</sup> *Machine Gun Tactics*, by Capt. R. V. K. Applin, D.S.O., 14th Hussars, p. 117.

<sup>5</sup> A machine gun, which with an officer in charge had watched for two months in an emplacement on the southern spur of Caesar's Camp by rank bad luck jammed at the critical moment of the attack on Ladysmith of the 6th of January, 1900.



during the summer covered the plains of the western area, the resolution and determination with which assaults were delivered, the systematic use of entrenchment both for attack and defence, all these favoured the machine guns, and though not used at the outset of the campaign by the Japanese, there are, on both sides, not a few striking examples of its power ; thus,

“ During the battle of Liao-yang at about 10 a.m. the 30th August, 4 Japanese mountain battery attempted to take up a position on the right flank of the Russians under cover of the kaoling 900 metres from an entrenched machine gun company commanded by Captain Sourine. There was no time to range. Captain Sourine therefore opened immediate fire, en échelonant de 20 mètres la première pièce tirant à 850 mètres. On this the Japanese battery inclined to its right towards a thicker part of the kaoling, but it was too late. Every living and moving creature fell beneath the storm of bullets. The machine guns fired 6000 rounds. This fire ceased one and a half minutes from its commencement, the objective having been destroyed. To obtain an effect similar to that produced by these 6000 rounds fired by eight Russian machine guns in one and a half minutes on the hostile battery, the employment of at least 400 infantry would have been necessary. Thus each machine gun did the work of 50 rifles, but with a much greater accuracy of fire.”<sup>1</sup>

This estimate of the power of a machine gun

<sup>1</sup> *Les Mitrailleuses*, par le Major Adjoint de l'État Major J. Godts, pp. 14-15.

expressed in rifles would seem based on the hypothesis that at 900 metres an infantryman can fire only one aimed shot a minute. The proportionate value arrived at is, however, curiously enough corroborated by the results of actual experiment on the rifle range. Thus at the School of Musketry, Bloemfontein, on 21st September, 1904, forty-two N.C.O.'s and men (all of whom were at least first-class shots, and had been trained continuously at the school for the previous five weeks) were pitted with Lee-Enfield rifles against a Maxim mounted on a Mark III. tripod. Each side fired for one minute at a target representing infantry in line extended at two paces, range unknown, but actually 1000 yards, rapid rate of fire, number of rounds unlimited, magazines of rifles charged before starting. The following were the results :

	Rounds fired.	Hits.	Per- centage.	Figures hit.	Per- centage of loss.
Rifles - - -	408	62	15.1	27	54
Maxim - - -	228	69	30.1	32	64

The comparatively small number of rounds fired by the Maxim was due to the time spent in picking up the range by firing groups of five or six shots.

A similar experiment, though not identical in conditions, was carried out in the United States army in 1908, the number of rifles being again forty-two, but the number of rounds limited to 750, the time un-

limited, and the ranges fixed at 600, 800, and 1000 yards. The results<sup>1</sup> attained were :

	Average hits.	Collective figure of merit.	Actual time of firing.
Rifles - - -	429	59-09	6 minutes.
Maxims - - -	601	79-54	1½ „

Each of these experiments shows a marked superior accuracy of fire for the machine gun. This superiority is obviously attributable not to the weapon itself, but to the fact that the control and direction of its fire were centred in the hands of one skilled man, whose aim, moreover, was not liable to be disconcerted by the process of opening and closing the breech after each discharge, and of re-loading when the magazine of the rifle became exhausted.

But in addition to superior accuracy, it is claimed by some advocates for the machine gun, that it is superior to its equivalent number of rifles in mobility, vulnerability and visibility.<sup>2</sup> These claims do not, however, appear wholly admissible. As regards mobility, whatever form of transport is adopted, the weapon cannot be held to be more mobile than the arm to which it is attached. With cavalry it clearly

<sup>1</sup> Both these experiments are quoted from Captain Applin's *Machine Gun Tactics*, an excellent treatise, presenting a valuable study of the details of the whole subject. French experiments are said to indicate that a machine gun is equivalent to 150-200 rifles at exactly known ranges, and to 60-80 rifles at ranges found by a range-finder. The German drill book estimates 80 rifles as its average equivalent (*Encyclopaedia Britannica*, vol. xvii. p. 247). *Infantry Training*, 1911, section 170, places the estimate as low as 30 rifles.

<sup>2</sup> *Machine Gun Tactics*, Captain Applin, pp. 13-16.

cannot move faster than the mounted horseman. With infantry the fact that the machine gun detachment is not mounted confines the guns to the same pace as foot soldiers. Moreover, on rough precipitous ground the man with the rifle can get more quickly into position and open fire more rapidly.<sup>1</sup> As regards vulnerability and visibility, the narrow frontage occupied by a machine gun and its detachment would seem to be both an advantage and a disadvantage—an advantage as favouring concealment, a disadvantage insomuch that as soon as a machine gun is spotted by the enemy it presents a target on which concentration of fire is easy. On the other hand, so long as sufficient—that is, two men—remain to man the gun, its volume of fire is not reduced by casualties. But, on the whole, it must be conceded that machine guns are more sensitive to hostile fire than their equivalent in rifles; they will find greater difficulty in crossing the fire-swept zone; they cannot remain in the open under close fire of the enemy without ceasing to be effective. Moreover,

*“Their enormous expenditure of ammunition and the comparatively small supply available, as well as their somewhat complicated mechanism, all tend to make machine guns unsuitable for prolonged fire action. They must not be used against unsuitable targets (such as firing line under cover), but their fire should be reserved for the decisive moment.”*<sup>2</sup>

<sup>1</sup> A modern Maxim weighs 35 lbs. without tripod.

<sup>2</sup> Translation of *Machine Gun Tactics in the Russo-Japanese War*, by Colonel Surin, Russian Army, in *Recent Publications of Military Interest*, General Staff, October, 1909.

*" Surprise is an important factor in the employment of machine guns, which should be concealed and whenever possible provided with cover from fire " (Field Service Regulations, part i. section 7).*

The application of this principle to the employment of machine guns in defence is well illustrated by two examples given by Captain von Beckmann : <sup>1</sup>

*" At the battle of Hei-kou-tai on 27th January, 1905, a Japanese company attacked Sha-shan. Four Russian machine guns opened fire at about 1100 yards upon the extended firing line, without causing any loss or affecting the advance. On the other hand, the Japanese on 1st March had approached to within 200 or 300 yards of the Russian position at Wang-chia-wo-pang, and were beginning the final assault. Two Russian machine guns suddenly came into action and the Japanese assault was repulsed with heavy loss owing to the annihilating fire."*

Of a surprise attack by machine gun fire the most striking instance yet afforded by military history was the surprise of Rennenkampf's Cossacks by the machine gun company of Prince Kanin's cavalry brigade during the battle of the Sha-Ho. On the 8th October Rennenkampf's squadrons had crossed the Tai-tzu, and moved westward, thus menacing the Japanese 1st Army's line supply through Chiao-tou to the Yalu. At 2 p.m. on the 9th, on receiving further reports of Russian activity in the same direction, Kuroki ordered the 2nd Cavalry Brigade, then near Yentai colliery, and commanded by Prince Kanin, to march

<sup>1</sup> Quoted in *Machine Gun Tactics*, Captain Applin, p. 125.

at once on Chia-tou. The brigade comprised eight squadrons. To these, on the special representations of a Japanese Staff officer who had had opportunities at Aldershot of watching the tactical employment of machine guns with British cavalry, six Hotchkiss guns had been recently added. The brigade anticipated the Russian cavalry at Chiao-tou, and there hastily collected reinforcements of some 1230 men from the line of communications. Accompanied by these, the brigade left Chiao-tou at 3 a.m. on the 12th October, and, after brushing aside a few patrols, arrived opposite Pen-si-hu at about 10 a.m. An hour and a half later, Prince Kanin's machine guns were brought quickly up on the ridge, and suddenly opened fire upon two battalions of Russian infantry, at a range of about 1500 yards. These units, the reserves to a firing line on the north bank of the river, were at the moment in close order, eating their midday meal. The attack came, therefore, as a complete surprise.

*"The battalions were dispersed in confusion, and suffered heavy losses during the three minutes the guns were turned on them. The attacking lines of the enemy next claimed the guns' attention, and were swept by fire from left to right as far as could be reached. The Japanese Hotchkiss guns are only sighted up to 2200 yards. This successful operation immediately resulted in the retirement of the Russian left, and was the commencement of Stackelberg's eventual retreat."*<sup>1</sup>

<sup>1</sup> Report by Captain Jardine, D.S.O., 5th Lancers, *Russo-Japanese War, British Officer's Reports*, vol. i. p. 667.

*"The massing of machine guns is likely to attract hostile artillery fire. For this reason, it is usually better to employ them in pairs, in support of the particular body of troops to which they belong. When an overwhelming fire on a particular point is required, it can be provided by concentrating the fire of dispersed pairs of guns. The guns of two or more units may, if required, be placed under the command of a specially selected officer, and employed as a special reserve in the hands of a brigade commander"* (Field Service Regulations, part i. section 7).

The Francô-German war, as we have seen, proved that a duel between field guns and machine guns can have but one result, unless the circumstances are exceptional—that is, unless the field battery is, like that at Liao-yang in the kaoling, caught at a disadvantage within effective rifle range. A Belgian Staff officer, Major Godts, in a series of able lectures on machine guns, argues, it is true, that at a short range, even under equal conditions, the machine gun is a match for the field.

*"At short ranges the machine gun is superior to the field in flatness of trajectory, penetration, and accuracy, but as the range increases these qualities diminish more rapidly for the former than the latter. At ranges from 1500 to 1800 metres the two are equal in these respects. At less range the machine gun is superior, at greater, the field gun. At 800 metres experiments made in Russia show that one machine gun is the equivalent of two field guns."*<sup>1</sup>

<sup>1</sup> *Les Mitrailleuses*, Godts, p. 16.

As to this, it may be remarked that no field battery commander would knowingly come into action within effective rifle range of a group of machine guns without first silencing them by destroying their personnel. Nor would he allow such a group to approach him unmolested and open fire at so short a range. The question whether, even without the element of surprise, a machine gun can tackle a field gun at such ranges seems, therefore, somewhat academic. Except by means of surprise, no such opportunities will fall to the machine gun. Given surprise and concealment, there can be no question that the volume of fire from a group of well-handled machine guns would certainly prove extraordinarily destructive to a limbered-up battery, and might even overwhelm a battery in action.

The ease with which, under normal conditions, artillery can crush machine guns, was forcibly illustrated at Kinsan on 26th June, 1905. The Japanese were attacking a position with a mountain battery and the 43rd Regiment. Two machine guns, brought into action by the Russians, were immediately silenced by the mountain guns.<sup>1</sup>

The rule laid down by *Field Service Regulations*, that machine guns should normally be employed in pairs, and should only for exceptional cases be concentrated in larger numbers, is the basis of their organization in the British service, viz. two for each regiment of cavalry and battalion of infantry. It may

<sup>1</sup> *Machine Gun Tactics*, p. 120.



be of interest to compare this with that of other armies :

State.	Cavalry.		Infantry.	
	Organization.	To what unit allotted.	Organization.	To what unit allotted.
Germany	6-Gun Battery	Division	6-Gun Company	Regiment.
France	2-Gun Section	Regiment	2-Gun Section	Regiment.
Russia	2-Gun Section	Regiment	4-Gun Detachment	Regiment.
Italy	4-Gun Detachment	Brigade	4-Gun Detachment	Regiment.
Austria	4-Gun Detachment	Regiment	2-Gun Section	1 per Infantry Regiment. 1 per Rifle Battalion.
Japan	8-Gun Battery	Brigade	6-Gun Company organized in three sections	Regiment.

There has been a marked tendency in all foreign armies since the Russo-Japanese war to increase the number of their machine guns, and to decentralize their control. The value of the weapon, which was not introduced in the German army until 1902, and was not adopted by the Japanese until after the battle of Liao-yang, was indeed little appreciated until the experiences of that war had been studied, and it is therefore not surprising that there should be differences of opinion as to its proper tactical use in battle. The main point at issue is that of control. The machine gun presents an extremely useful reserve of fire. Should this reserve be left at the disposal of commanding officers of cavalry regiments and infantry

battalions, or should it be concentrated in the hands of higher authority? If used at the right time and the right place, there can be no question that the concentration of such reserves of fire may produce very important results.

"The Japanese," says an eye-witness of the fighting round Mukden, "brought up during the night dozens of machine guns with hundreds of thousands of cartridges to the front line of skirmishers, from 400 to 500 yards from our position, and entrenched them there. When the assault commenced at dawn, the machine guns opened fire with fatal accuracy on the parapets of our trenches and on our reserves, preventing them from coming up. We could do nothing with the enemy, because, where the machine guns showed the least vulnerability, they were protected by shields of bullet-proof steel."<sup>1</sup>

Again, at Mukden on the 1st March, all the machine guns of a whole Japanese division were brought into action upon a Russian *point d'appui*. The Russian fire was silenced, but burst out again whenever the machine gun slackened. The Japanese used these pauses in the enemy's fire to press forward to close range under cover of their machine gun fire.

Moreover, the danger of machine guns being pushed up indiscriminately into battalion firing lines in the open was very evident in South Africa. On the other hand, as *Infantry Training* points out, there are

<sup>1</sup>Quoted from *Mitrailleuses à l'étranger*, par Lieut. R., in Applin's *Machine Gun Tactics*, p. 120.

certain definite disadvantages in brigading machine guns, viz. :

“(i) *The difficulties of concealment are increased.*

“(ii) *At shorter ranges than 1000 yards the control of more than one section usually becomes difficult, more especially in attack.*

“(iii) *The positions suitable for a number of sections in attack are often difficult to find at effective and close ranges, and the combined movement of a number of sections is only possible under such conditions when the ground is very favourable.*”<sup>1</sup>

For the infantry arm, therefore, the General Staff direct the machine gun section to be regarded as “an integral part of the battalion to which they belong.” But as circumstances may make it advisable to employ several sections together, a brigade commander may, if he desires, detach two or more machine-gun sections temporarily from their battalions and place them under the brigade machine-gun officer for employment as a unit of the brigade.<sup>2</sup>

On the other hand, in a cavalry fight it is prescribed that the machine guns of a brigade “will usually be massed under one commander, but may be employed in pairs when necessary.”<sup>3</sup>

The German cavalry regulations similarly contemplate the habitual employment of machine guns in conjunction with horse artillery in the mounted cavalry combat, and direct that both are to come

<sup>1</sup> *v. Infantry Training*, section 162 (4).

<sup>2</sup> *v. Ibid.* section 162 (1).

<sup>3</sup> *v. Cavalry Training*, 1907, section 150 (iv).

early into action on the order of the cavalry commander.<sup>1</sup> On the other hand, in the Russian army the employment of machine guns in a fight with the *arme blanche* is not regarded with favour, an opinion perhaps due to a general mistrust of the mounted combat. Thus, Colonel von Byunting, in a recent essay on "Cavalry and Machine Guns," declares<sup>2</sup> that:

*"Machine guns are of little use to cavalry when mounted; but they can and must be used to the utmost in dismounted action. . . . The addition of a gun to a line of cavalry skirmishers is relatively of greater importance than its addition to infantry, for it brings into being a power which previously only existed to a very limited extent."*

There can be no question that the addition of machine guns to cavalry and mounted infantry greatly adds to their fire power, and thus for their strategic and protective duties, and for attack as well as defence, increases the potentiality of the mounted arm. Our own *Cavalry Training* does not directly refer to this, yet its observations on dismounted action make clear how admirably machine guns meet the special needs of cavalry when so engaged.

*"The effective employment of fire action by cavalry is dependent on a just appreciation of the power of the rifle, combined with a thorough acquaintance with the advantages to be derived from rapid and concealed movement. The number of rifles available will, in*

<sup>1</sup> v. *German Cavalry Drill*, 1909, paragraphs 301 and 507.

<sup>2</sup> v. Translation, p. 26, *Recent Publications of Military Interest*, General Staff, July, 1909.

normal circumstances, not be great. Superiority in this respect, especially when opposed by infantry, should be compensated for by judicious leading and superior mobility. . . . A protracted fire fight is unsuited to the action of cavalry. Consequently a reinforcement of the firing line is out of place. It is preferable to employ as large a number of rifles as possible as soon as the enemy's dispositions are clear, and to develop the greatest fire effects from the moment the leader decides to open fire. This latter object will be more effectually obtained by rapid bursts and concentration of fire than by a slow continuous fire distributed against the whole of the enemy's front. Where favourable targets present themselves, the utmost rapidity of fire compatible with accuracy should be aimed at, so as to overwhelm the enemy."<sup>1</sup>

"The utmost rapidity of fire compatible with accuracy" so exactly hits off the special characteristic of the machine gun, that it may be assumed that the General Staff had the value of that weapon for the dismounted section specially in mind when issuing these instructions. The great value in attack has been already illustrated by the exploits of the Japanese 2nd Cavalry Brigade at the Sha-Ho. As an example of its defensive power, the following incident may be quoted from Captain Applin's book: <sup>2</sup>

"On 8th June, 1905, at Wan-ching, General Samsonov had two cavalry regiments and a machine gun section of four guns. During the dismounted action

<sup>1</sup> *Cavalry Training*, 1907, section 152 (1).

<sup>2</sup> *Machine Gun Tactics*, p. 83.

*these machine guns were concealed in the firing line, two in the centre 100 yards apart, and one on each flank about 400 yards apart. When the firing line retired, the machine guns opened fire and held the position alone; and so well had they been posted that, though attacked by infantry, which advanced to within 300 yards of the position, supported by artillery, which brought a heavy fire to bear on the front occupied by the machine guns, they were able to hold their ground for nearly three hours, when the Japanese abandoned the attack."*

It is obvious, too, that the machine gun's capacity of developing instantly a great reserve of rifle fire is of the greatest assistance to mounted troops engaged on detached duties, especially on the duty of reconnaissance. Thus, on the 26th August, 1904, machine guns, working with a couple of dismounted squadrons, covered successfully the crossing of the Tai-tzu-Ho by two squadrons of the 2nd Daghestan Cavalry, who were retiring in the face of a superior force of Japanese infantry after the completion of a reconnaissance. Similarly, two months later, the machine guns of the same corps checked a body of hostile infantry debouching from the village of Tu-tai-tzu, and thus gained time for two reconnoitring squadrons to mount and ride away; and in the following February (27 to 28), the same regiment held with its machine gun and rifle fire the village of Hou-ma-hin-lin-tzu, while a fresh line of defence was being taken up and organized in rear by the infantry.<sup>1</sup>

<sup>1</sup> v. Colonel v. Byunting's paper above quoted.

In the later phases of the battle of Mukden, when the Russian retreat had commenced, the Japanese machine gun batteries were used with remarkable effect to break down resistance and stay counter-attacks. Thus, at 1.10 p.m. on the 10th March, part of a pursuing detachment under Major-General Okubo occupied a small hill near Erh-tou-tzu, a village on the main road to the north of Mukden, and thence directed its fire upon the enemy retreating along the railway to the west of the village. Some Russian guns on this came into action to the north-west of the village, enfilading the right flank of the Japanese detachment, which for the moment was isolated. The detachment, however, included a machine-gun battery. The machine guns pushed boldly forward in front of the menaced flank and thence came into action against the enemy's artillery with such effect that the latter withdrew in great disorder, leaving all his ammunition wagons behind.

Again, a little later the same afternoon, a mile to the westward, the 34th Japanese infantry Regiment, and the 2nd and 3rd battalions of the 23rd Regiment, formed a line facing south-west, with their left resting on the village of Liao-kua-pu-tzu, and their right on the railway running to the north from Mukden, thus intercepting the Russian line of retreat. A Russian brigade coming from Mukden made a desperate effort to break through this barrier, and pushed on to such close quarters that hand grenades were used. The issue of the fight seemed doubtful, had not the machine-gun battery of the 6th Japanese Division

come up opportunely at Lao-kua-pu-tzu, and thence developed such a heavy fire on the Russian brigade, that it was compelled to fall back on Mukdeff. At 5 p.m. a second attempt was made to break the Japanese encircling belt, this time—according to Japanese accounts—by a division, but again did the containing fire of the machine guns and rifles stay the counter-attack and force the enemy back from his line of retreat.

Although in both these instances the machine guns were operating with infantry, it is reasonable to deduce from them that cavalry in a mission of pursuit would find such aid of extraordinary value in cutting off and holding the enemy's line of retreat and crushing his efforts to break through.

This containing power of machine guns will undoubtedly, in future wars, be fully utilized by infantry as well as cavalry, on detached duties, on advanced guard, in outpost work, and in the preliminary stages of a battle. In all such situations the Maxim will be of great assistance in enabling ground to be seized and held against counter-attacks until reinforcements come up. In the attack, machine guns will chiefly be used in assisting the advance by their covering fire, in protecting its flanks, in securing localities when seized, and preparing for the assault by bursts of fire.<sup>1</sup> In the defence, only a limited number of guns will be actually allotted to the position. The mobility of the remainder will be retained by their being held in readiness under cover or placed in concealed positions

<sup>1</sup> *v. Infantry Training*, 1911, section 162 (8).



ready to fire should a favourable opportunity offer.<sup>1</sup> For night defence machine guns may, under certain conditions, prove extraordinarily effective, though on really dark nights the guns should be sighted and laid beforehand. Their concealment from the enemy is, moreover, essential. Otherwise he will deflect his attack and avoid their fire. Whatever duties may be allotted, it is essential that the machine-gun commander should be given definite orders by the officer commanding the body of troops to which he belongs as to what is required of him, and should be allowed freedom of action as to method of execution.

Finally, Major Godt's conclusions may be accepted that :

“ Machine guns cannot replace either infantry or cavalry. It is an arm of opportunity, to be used boldly, intelligently, and resolutely, as opportunity offers, for the assistance of the sister arms and in close touch with them.”<sup>2</sup>

<sup>1</sup> *v. Infantry Training*, 1911, section 162 (9).

<sup>2</sup> *Les Mitrailleuses*, p. 25.

## CHAPTER XIII.

### MEANS OF COMMUNICATION.

“The communication of orders, reports, and messages in the field is effected by means of staff or orderly officers, by the signal service, the air service, or by the postal service.”—*Field Service Regulations*, part i. section 9 (3).

WAR inevitably assimilates to its own purposes every new invention introduced by science to ameliorate the normal existence of the community. This process has been specially marked in its absorption of that development of new means of communication, which has so profoundly changed the commercial, social, and political life of the world during the last seventy years. The control of war has thus undergone a gradual revolution, a revolution not wholly completed even at the time of the last great campaign (1904-5), but which the next will see finally consummated. A hundred years ago—save for the semaphore, which connected in fine weather London with the sea-ports, and was even on occasion used in the field, as, for example, during the occupation of the lines of Torres Vedras—the mounted messenger was the swiftest means of communication on land, a sailing packet the most rapid bearer of despatches

across the seas. The submarine cable and wireless telegraphy for transmarine communications, air-line, cable and wireless telegraphy, and telephones for overland have now become essentials in the machinery of war. Formerly the orders of the Central Government took weeks or even months to reach the hands of officers directing naval or military operations in distant theatres of war. Sea commanders were dependent on wind and weather for the communication of instructions to detached squadrons. On land the co-ordination of the movements of detachments with that of the main army was subject to the endurance and speed of relays of mounted messengers. To-day, whether for good or ill, Commanders-in-Chief in both services will rarely, if ever, be exempt from the immediate control of London, and will themselves be in direct touch with all their subordinates, even a thousand miles or more away from headquarters. Lord Roberts, during the South African war, was thus, when at Pretoria, in hourly communication with Cape-town and daily with Pall Mall.<sup>1</sup> In Manchuria, Kuropatkin was controlled by St. Petersburg, Oyama was advised by Tokio. A British fleet in the North Sea or even in the mid-Atlantic can now report in half an hour to the Admiralty. Information obtained by the patrols of the British force operating against the Abors reached London in twenty-four hours.

The military importance of the telegraph and submarine cable have, in fact, become as much a common

<sup>1</sup> 18,236 miles of telegraph wire were laid during the war by the R.E. in addition to 9395 captured permanent lines.

place as that of the act of writing. Telephones proved their value for defensive purposes at Ladysmith, and later on in connection with the blockhouse system during the South African war. The Japanese Staff perceived the advantage to be gained by extending this invention to field operations, and, before the outbreak of the Manchurian war, equipped each of their divisions with a sound working organization for the joint use of field telegraphs and telephones for intercommunication. The field telegraphic sections of the Engineer battalion allotted to each division was thus able to link up divisional headquarters with its army headquarters on the one hand and with the headquarters of each of its artillery and infantry brigade commanders on the other. Certain of the infantry units were, in addition, given a portable telephonic equipment with about five kilometres of wire. A thoroughly efficient service was thus established, which proved of the greatest value in action.<sup>1</sup> Visual signalling was, however, neglected in the Japanese armies and wireless untried. The Russians used wireless telegraphy with some success, but not systematically. Their intercommunication organization was much inferior to the Japanese. Both the telegraph battalions employed in Manchuria on the Russian side had been improvised for the war from imperfectly trained personnel, the majority of the men not being able even to read and write properly.<sup>1</sup> In action, only the larger units were connected by telegraph or telephone. Signalling with flag and helio

<sup>1</sup> *v. Rivista di Artiglieria e Genio*, November, 1907.

was only introduced in the army after the war had commenced.

Since the war in the Far East all armies have devoted attention to the improvement of these various means of intercommunication and of their co-ordination. In the British army, an Army Signal Service has recently been organized which combines in one system and under the control of a special staff all the methods of intercommunication made use of in the field, viz. wireless telegraphy, cable and air lines, visual signalling, and despatch-carrying.<sup>1</sup> This new service provides the following as the normal method of communication between the units named. (See page 336.)

A signal company, with 100 miles of air-line, is also provided for use on the lines of communication.

This signal service is carried out by signal service units, allotted as under :

To a Cavalry Division—a Signal Squadron ;

To a Cavalry or Mounted Brigade—a Signal Troop ;

To each Infantry Division—a Signal Company ;

To Army Headquarters—one or more Air-line Signal Companies, one or more Cable Signal Companies, one or more Wireless Signal Companies ;

To Lines of Communication—one or more Signal Companies.

It will be seen that by this system the Commander-in-Chief will be placed in direct touch with his

<sup>1</sup> *v. Army Orders*, No. 309 of 1911.

Unit communications.	Unit to be communicated with.	Method.
General Headquarters	{ Cavalry Divisional Headquarters	Wireless.
	{ Mounted Brigades	
	{ Army Headquarters	Cable or Wireless.
	{ Divisional Headquarters	Cable.
	{ Advanced Base	Air-line.
Cavalry Division	{ General Headquarters	Wireless.
	{ Brigades	
	{ Contact Squadrons	
	{ General Intercommunica-	Cable.
	{ tion	
Cavalry Brigade	{ Permanent Telegraph System	Visual Signalling. Despatch Riders.
	{ Local	
	{ Outpost Line	Cable and Telephone.
	{ Permanent Telegraph System	
	{ Local	Visual Signalling. Despatch Riders.
Mounted Brigade	{ General Headquarters	Wireless.
	{ Cavalry Divisional Headquarters	
	{ Local	Visual Signalling. Despatch Riders.
Divisional Headquarters	{ Infantry Brigades	Telephone.
	{ Artillery Brigades	
	{ General Purposes	Cable.
	{ Local	Visual Signalling. Despatch Riders.
Regimental Units	{ Local Communication	Visual Signalling. Despatch Riders.

immediate subordinates, and the whole force will be linked together for strategical as well as tactical purposes.

The personnel employed in this service is supplied mainly by the Royal Engineers; the officers are

partly R.E. and partly officers seconded from other arms of the service ; the N.C.O's and men are composed of sapper telegraphists and of signalmen selected from the signallers of other arms and transferred to the Royal Engineers.

## CHAPTER XIV.

### INTERCOMMUNICATION AND ORDERS.

"The constant maintenance of communication between the various parts of an army is a matter of urgent importance; it is on this to a great extent that the possibility of co-operation depends. . . .

"All subordinate commanders are responsible for keeping their respective superiors, as well as neighbouring commanders, regularly informed of the progress of events and of important changes in the situation as they occur. . . .

"The elaborate means of communication provided under modern conditions should not be used in such a manner as to cripple the initiative of subordinates by unnecessary interference."—*Field Service Regulations*, part i. section 8.

THE expression "army" in the above instructions must be taken in its wider sense. It includes all the military forces operating in the same theatre of war, whether organized in one or more armies, and whether in tactical touch with each other or working at some distance apart in strategical co-operation. The invention of the electric telegraph, of wireless telegraphy, of bicycles, motor cars, and aeroplanes, the development of signalling, the inclusion of cable companies, air-line companies, telegraph companies, and wireless telegraph companies in the war organization of modern armies, have greatly facilitated the maintenance of systematic communication, both strategically and



tactically, between armies and the component parts of an army in the field.

Strategically the need for such means of communication is as apparent in the wars of a century ago as it is to-day. Napoleon, it is true, not only administered France while commanding in the field, but attempted to control the movements of armies detached to other and distant theatres of war. The mischievous effect of this attempt was particularly felt in the Peninsular campaign, for, notwithstanding an elaborate organization of military post relays between Paris and Madrid, the Imperial orders frequently miscarried. Even when received, they were often found to be based on obsolete information, and to be quite unsuited to the actual situation. With an absolute chief of Napoleon's temperament, those conditions were peculiarly unfortunate. His overmastering mind obstinately rejected the idea of delegating unfettered responsibility, and refused to recognize the need for training his field-m Marshals to act on their own judgment and loyally support each other. This defect in the Napoleonic system of command shipwrecked his plans in more than one important crisis of his career.

That Napoleon would have abused the modern facilities of communication in war, if they had been at his disposal, by tightening still closer his grip on such subordinates as King Joseph, Soult, and Marmont in Spain, would seem more than probable. Yet the most serious flaw in the conduct of the French operations in that campaign, the lack of unity in command, would at least have been eliminated. Moreover, in the

great Emperor's last throw for fortune, the telephone, perhaps even the signalling flag, would have made impossible the fiasco of D'Erlon's marching and counter-marching between Quatre Bras and Ligny, and might have summoned Grouchy to Waterloo.

Nevertheless, the tactical need of rapid and reliable means of communication between Headquarters and distant parts of the battlefield has greatly increased under modern fighting conditions. Its real urgency is, indeed, due to the immense extension of the battle line, a phenomenon dating only from the last two campaigns. At Gravelotte the frontage of Bazaine's position was but seven miles, that of the German enveloping attack, measured from flank to flank, about eleven. The German forces engaged amounted to 178,000 all ranks, the French were some 130,000. Contrast these figures with those of Diamond Hill. There, 7000 Boers defended a front of twenty miles, and were outflanked by Lord Roberts' troops, in strength about 16,000. This extreme extension was, it is true, due to the exaggerated application by both sides of the doctrine of envelopment. Nevertheless, one of the chief phenomena of the Manchurian battlefields was their amazing development in width, a development in part attributable to the large forces engaged, but not wholly so, for in nearly every engagement the relative proportion between length of frontage and actual strength was much greater than in the Franco-German war.

Thus, at Te-li-ssu, one of the smaller actions, Stackelberg, with a force but one-third the strength of

Bazaine's at Gravelotte, occupied one and a half miles more frontage. At Liao-yang, the Japanese three armies of an aggregate effective strength of about 130,000, attacked on a front of nineteen and a half miles. At Mukden, Kuropatkin, with 310,000 men, lay entrenched on a front of some forty-seven miles. To envelop this front, Oyama's five armies, though only of equal fighting strength, were, on the 6th March, deployed in a semicircle, having the immense circumference of eighty miles from east to west.

To co-ordinate and control in battle the movement of such great forces on a front, along which the best mounted horseman could barely ride in one day, would have been a task physically impossible for any Headquarters Staff under the old conditions of intercommunication. At Liao-yang, on the Sha-Ho, at Mukden, co-ordination and co-operation were essential to secure victory for the flag of the Rising Sun, and were rendered possible by the telephonic system, which placed the Japanese Commander-in-Chief and Army Commanders in immediate touch with their respective subordinates. Yet the Japanese system of communication was not complete. Wireless telegraphy was then still somewhat in the experimental stage, but the neglect of signalling instruction and signalling organization was inexcusable in the light of their proved value in South Africa. For lack of it at Yu-shu-Ling, where the telephone wires were broken, and the country so difficult that mounted men had to lead their horses, the transmission of orders and reports became almost

impossible, and unity of action between the various columns failed.<sup>1</sup>

The perfected system of communication now provided in field armies necessitates, however, the two cautions quoted at the commencement of this chapter from the General Staff's instructions, the one, as to the insufficient use of these means of communication, being addressed to subordinates, and the second, as to their abuse, to commanders responsible for the issue of orders. The former are reminded of their responsibility for keeping their commander regularly informed of the progress of events and of changes in the situation. The latter are warned against undue interference with their subordinates. Neither of these warnings involve any new principle in war. In both cases, the rule emphasized might be deduced from the pages of Thucydides and Tacitus. Yet the great increase in the area of battlefields, in depth as well as width, coupled with the development and organization of new means of communication, have placed the relations of commanders and subordinates on a new footing, and enhanced the importance of the application of these principles tactically as well as strategically.

Strategically, as we have seen, their observance has always been necessary. Tactically it has only recently become vital. The vision of the supreme commander and his staff can no longer, as at Waterloo, and even in some measure at Gravelotte and Sedan, embrace the whole battlefield. Very rarely will it again be possible, in a great engagement between modern

<sup>1</sup> v. *Staff Officer's Scrap-Book*, vol. i. pp. 323 and 189.

national armies, for a Commander-in-Chief to ride to this or that critical spot in the line of battle, view for himself the situation, encourage the troops with his presence, and direct personally their movements, as Wellington did at Waterloo, and Sir Redvers Buller at Colenso. To the supreme commander of a great modern army or group of armies now falls a harder task, to sit, as Oyama sat at Yen-tai throughout the crisis of the Sha-Ho, at a table covered with maps, miles in rear ~~and~~ out of sight of his armies, army corps, and divisions, and from thence to direct their movements like a great chess player without sight of board. The difficulty of this direction has multiplied exceedingly. Its nature is very different from that of former days when the Commander-in-Chief could base his appreciation of the situation on his own vision and judgment, and could prescribe to his subordinates, not only tasks, but their method of execution. The situation must now be gauged from the reports of others. Orders emanating from General Headquarters continue to assign objectives and general missions, but rarely, if ever, should they direct the manner of their execution.

The credit of first realizing the changed relations between Commander and subordinate must be given to the General Staff of Prussia. The success of the German arms in 1870 was in no small measure attributable to the full acceptance of these new conditions of command, and consequent growth of that strong mutual loyalty and mutual trust which they demand. It is not surprising, therefore, that Japan, having

selected the German army as the model for her land forces, developed further these principles. The selfless patriotism of her officers and men much assisted this development. The personal ambitions, the petty jealousies, which have marred the career of many a great soldier, and were not unknown even amongst the German Staff of 1870, seemed impossible to the Japanese officer with mind, heart, and body concentrated on but one object, the service of his Emperor.

And so next to the superb gallantry of officers and men, the most striking feature of the Manchurian campaign is the unity of purpose which knit together the purpose of every battle, whether by sea or land, and harmonized the conduct of every one of the many actions, making up those great dramas of war, Liao-yang, the Sha-Ho, and Mukden. Each separate battle was a step forward in the consummation of the strategic plan formed by the Emperor's naval and military advisers at Tokio. The several armies, divisions, brigades, and regiments doing their duty under the supreme command of Oyama at Liao-yang, the Sha-Ho, and Mukden, on those great fronts of thirty, forty, and even eighty miles, were working in complete co-operation with each other on one common battle plan, the plan emanating from the brain of the Commander-in-Chief. The Major commanding the Kobi battalion, desperately defending Pen-si-hu on the far east of the Japanese line of battle of the Sha-Ho, was in accord and complete harmony of purpose with the Cavalry Brigadier who, forty miles to the westward, played with and deceived Dembovski's detached force

and the 6th Siberian Army Corps. The leader of a cavalry raid against the railway line north of Mukden, and the commander of a Japanese cruiser watching the approaches to the Korean Straits, although separated by 800 miles of land and sea, were co-operating not merely for a common purpose, but in complete strategic unity of action.

But if the 1904-5 war furnishes an admirable example of the right use of facility of communication in the exercise of command, it gives also clear warning of the mischief resulting from misuse. From start to finish the Russian forces in Manchuria were cursed with the evil of over centralization. During the opening months of the campaign Kuropatkin himself was hampered in his functions of Commander-in-Chief by the interference of Admiral Alexeiev and of the Russian War Office. Overruled in his plan of avoiding offensive movement until reinforcements should give him numerical superiority, he was compelled by superior authority to commit Stackelberg, with only 35,000 men, to the attempt at relieving Port-Arthur.<sup>1</sup> On the Yalu his orders to his immediate subordinate, General Zasulich, to fight a rear-guard action, had been contradicted by instructions sent direct by Alexeiev to the detachment commander to offer a vigorous resistance.<sup>2</sup> Even as late as the battle of the Sha-Ho he was restrained by the Viceroy's instructions from the free use of the troops available, the 6th Siberian Corps being placed at his disposal only on

<sup>1</sup> v. *Official History, Russo-Japanese War*, vol. i. pp. 172-3.

<sup>2</sup> v. *Ibid.* p. 112 f.n.

the condition that it was to operate within a strictly limited area.<sup>1</sup>

Yet, though Kuropatkin was thus sinned against, he was himself a flagrant sinner. Ever careful and troubled about many petty details, he totally failed to grasp the importance of the main thing needful to successful command, the delegation of responsibility. His orders were irritating, both in their frequency and their length. Yet they either concealed with extraordinary care from his subordinates his real intentions and designs, or set them forth so obscurely that they were misinterpreted. Thus, at Ta-shih-chiao Zarubaiev failed to understand that he was not required to fight a serious battle, and in case of failure to fall back at once to An-shan-shan, but to delay the enemy by a series of rear-guard actions.<sup>2</sup> At Liao-yang Kuropatkin's ultimate intention was :

*"To concentrate his troops in the second of his prepared lines of defence, and at some favourable opportunity, using the town of Liao-yang as a bridge head, to fall upon the Japanese with superior numbers."*<sup>3</sup>

Yet his orders to his subordinates contained no indication of this design for a counter-stroke ; even those of the 29th August<sup>4</sup> assign no other task to any commander than "to defend" or "to take up" such and such a position. There are times, no doubt, when the success of a commander's plans depends on their being concealed in his own heart.

<sup>1</sup> *v. Official History, Russo-Japanese War*, part v. p. 10.

<sup>2</sup> *v. Ibid.* vol. i. pp. 422-23. The criticism, however, therein recorded is adverse to Zarubaiev.

<sup>3</sup> *v. Ibid.* part iv. p. 12.

<sup>4</sup> *v. Ibid.* pp. 116-120.



Stonewall Jackson in the Valley Campaign was wont to keep both staff and commanding officers in complete ignorance of his column's destination. But it was a grave blunder to sap the morale of a great army by thus impressing on it the belief that passive defence was its sole rôle. A yet graver blunder was the lack of confidence Kuropatkin displayed in his subordinates. If a special duty or mission was determined on, instead of selecting the best officer available, and entrusting to him full responsibility, the Russian Commander-in-Chief was wont to divide the command, hoping thus apparently the better to control the movement himself. The direction, for instance, of the offensive movement against the Japanese 1st Army, at the end of July, 1904, was divided between Count Keller, General Sluchevski and General Liubavin, all acting independently.

*"Thus, the Japanese commander, though inferior in strength to his opponents, was in a much better position to manœuvre; and while the attack (i.e. the Japanese) was a perfectly combined operation, the defence (i.e. the Russian) lacked both cohesion and control."*<sup>1</sup>

Exactly the same blunder was made in organizing the counter-stroke against Kuroki on the right bank of the Tai-tzu-Ho during the last phase of the Liao-yang battle. Bilderling, Stackelberg, and Orloff were working independently, while Sluchevski was brought up from the reserve to command the attempt to recapture Manju Yama, although he had never seen the

<sup>1</sup> v. *Official History, Russo-Japanese War*, vol i. pp. 274-5.

ground, and was junior to Bilderling, who had been in command locally throughout the previous two days' fighting.<sup>1</sup> It is not surprising that the utmost confusion resulted, and that the whole counter-stroke miscarried through lack of timing and united effort. Similarly, on the Sha-Ho the command of the forces detailed to attack the Eastern passes was divided between Stackelberg and Rennenkampf, while on the western flank Dembovski's detachment and the 6th Siberian Corps were left independent of the General Officer commanding the Western Force—Bilderling—and so were wasted.<sup>2</sup>

But the most mischievous feature in Kuropatkin's system of command was his interference with his chief commanders, by the issue of direct orders to their subordinates without consultation and without even their knowledge. Thus, during the opening phase of Liao-yang a portion of Bilderling's reserves were moved by an order from Army Headquarters without his being even informed of the decision.<sup>3</sup> At the Sha-Ho battle, on the night of the 12th October, direct orders were similarly sent to Sluchevski to maintain the 10th Corps on the Hang-pao-shan—Ning-kuan-tun line. Sluchevski's corps, however, formed part of the Western Force, commanded by General Bilderling, and as the latter's orders required it to fall back on the Sha-Ho, the corps commander

<sup>1</sup> v. *Official History, Russo-Japanese War*, part iv. p. 96.

<sup>2</sup> The 6th Siberian Corps was, it is true, placed at Bilderling's disposal on the evening of the 13th of October, but it was then too late.

<sup>3</sup> v. *Official History, Russo-Japanese War*, part iv. p. 16 f.n.

obeyed his immediate superior, judging that his instructions were more conformable to the requirements of the situation than those of the Commander-in-Chief.<sup>1</sup>

The story of the orders issued that day for the disposal of the 2nd Siberian Corps, part of General Stackelberg's command, is still less edifying. It is too long to repeat here in detail, but should be read in the *Official History*.<sup>2</sup> Let it suffice to recall that Kuropatkin, without consulting Stackelberg, or acquainting himself with his situation, which was not satisfactory, authorized Zarubaiev—the commander of an independent corps—the 4th Siberian—to call up the 2nd Siberians, that is, one-third of Stackelberg's whole force, to his assistance. Remonstrances, reports, orders, and counter-orders flew back and forwards all day between Army Headquarters, Stackelberg, Zarubaiev, and the 2nd Siberian Corps, with the result that the corps itself remained unused, and its services were lost to the army for twelve very critical hours.

The mischief of this interference with subordinates was, it will have been observed, accentuated by the Commander-in-Chief's imperfect knowledge of their situation. For that defect, the subordinates were primarily responsible, and cannot be excused. Yet trust begets loyalty, while undue restraint and interference tends to create a desire to be free from authority. Be that as it may, it is evident that the relations between Kuropatkin and his subordinates, and their

<sup>1</sup> v. *Official History, Russo-Japanese War*, part v. p. 87.

<sup>2</sup> v. *Ibid.* part v. pp. 99-102.

methods of communication were as much amiss in the Russian forces as they were admirable in the Japanese.

"*Communications in the field take the form of orders, reports and messages*" (*Field Service Regulations*, part i. section (9)).

The term "orders" in this general classification must be taken to include instructions, directions, and other similar memoranda, which, though not cast in the form of orders, are issued in the field for the guidance of commanders. Instructions are, indeed, specifically referred to in a later section (section 10 (1) of the *Field Service Regulations*) as issuable to commanders on detachment instead of operation orders. The spirit of such instructions is, however, identical with that of operation orders, the aim of both being to communicate to the commander the intentions of his superior, and the part allotted to the commander in the execution of those intentions, leaving to him a free hand in the method of execution. This freedom is, however, more completely untrammelled in the case of instructions to a detachment commander than in operation orders promulgated to units working in tactical touch with each other, whose movements it may be necessary to tie down to a certain line, in order to produce the situation devised by Headquarters.

In 1870 a special form of such instructions to detachment commanders was recognized in the German service, termed directions (*directuren*), and defined as:

"*Communications from a higher to an inferior officer, which are not so much put forth as definite orders*

*for his immediate line of action, but rather as leading ideas. They thus serve as a guide in the otherwise independent formation of the resolutions."*<sup>1</sup>

Thus, General Steinmetz, when moving forward the 1st Army from its points of assembly to the French frontier at the commencement of the 1870 war, conceived that "he had only received delaying or hampering instructions from the Royal Headquarters. He therefore wished to have more comprehensive directions extending over a longer period, during which he could preserve the divided freedom of his own resolutions."<sup>2</sup> In other words, he was receiving orders which he had no choice but to obey. He desired, *in lieu*, to be sent suggestions, which it would be open to him to set on one side. The Prussian Great General Staff did not yield to his wishes, as the moment was inopportune. Steinmetz was an eager, headlong fighter, and it was intended that "neither the 2nd, much less the weaker 1st Army, should be exposed singly to a collision with the French main force."<sup>2</sup>

Six days earlier a "direction" had been given to the 3rd Army, notifying that "His Majesty deems it expedient for the 3rd Army to advance forthwith," but the Crown Prince decided that "he must refrain from carrying out this operation," as the assembly of his unit was not yet completed.<sup>3</sup> In most services "His Majesty deems it expedient, etc.," would have

<sup>1</sup> *v. Official History, Franco-German War*, Clarke's translation, vol. i. p. 105 f.n. The German Staff now regard instructions in the same light as the British General Staff.

<sup>2</sup> *v. Ibid.* p. 185.

<sup>3</sup> *v. Ibid.* p. 70.

been read as a military command, but it is noticeable that when von Moltke meant to convey an order he said so in very plain terms, such as, "His Majesty orders, etc.," or "His Majesty commands, etc."<sup>1</sup> Sugary phrases, which it was customary at one time in the British service to wrap round a definite order, are not to be found anywhere in those signed by the great German Chief of the Staff. Orders with him were orders, and stood on a different footing to requests or suggestions.

A good example of instructions issued to detachment commanders is to be found in the informal, personal letters which Lord Roberts addressed with his own hand to various general officers holding important commands in the field on his arrival in South Africa. In the two quoted in the *Official History* it will be observed that he either prescribes the scope of the operations to be pursued locally, or expresses approval of the policy previously adopted, leaving the method of execution entirely to the commander, and requesting his views as to certain points which would affect the Commander-in-Chief's own plan for the operations of the main army.<sup>2</sup>

*Field Service Regulations*, section 10 (4) now prescribe that "only in exceptional circumstances should explanation be given of what is ordered." The main

<sup>1</sup> *v. Official History, Franco-German War*, Clarke's translation, vol. i. Royal orders given on pp. 262, 277, 286, 299 and 399.

<sup>2</sup> *v. Official History, South African War*, vol. i. pp. 433-4. The memorandum left with Sir F. Forestier-Walker by Sir Redvers Buller on the embarkation of the latter for Durban in November, 1899, may also be studied with advantage (*v. Ibid.* p. 209).

aim of this regulation is no doubt to ensure that orders should be clear and definite. An order requiring explanation is, as a rule, defective in drafting. There are occasions, however, when it is desirable that instructions, supplementary to orders, may be issued to set forth, somewhat on the line of the Directions of 1870, the supreme authority's views and suggestions, not as commands, but for the conditional consideration of the subordinate. Sir Redvers Buller thus supplemented his orders to Lord Methuen, when despatching him to the Orange River in the second week of November, 1899, specifically stating that the supplementary memorandum was not intended to tie the latter's hands, but was sent "for such use as you choose to make of it."<sup>1</sup> Sir John French, when directing the movements of Generals Rundle, Pole-Carew, and Dickson's columns against the Boer forces in the vicinity of Wepener, in April, 1900, similarly supplemented his "Field Force orders" by the issue of "instructions" to Major-General Pole-Carew.<sup>2</sup> Again, during the battle of the Sha-Ho there was at least one notable similar instance. The text of Oyama's operation orders for the first day of the great counter-move—the 10th October—definitely directs the attack of the enemy along his whole front, and assigns to each of the three Japanese armies objectives to reach which would entail the thrusting back of Kuropatkin's troops some ten miles.<sup>3</sup> Yet

<sup>1</sup> *v. Official History, South African War*, vol. i. p. 212.

<sup>2</sup> *v. Ibid.* vol. ii. p. 323.

<sup>3</sup> *v. Official History, Russo-Japanese War*, part v. p. 28.

the British *Official History* records that actually "his intention was merely to confuse his enemy's plans, leaving his own future movements to depend upon the later developments."<sup>1</sup> The 2nd Army, moreover, we are told, had "orders"<sup>2</sup> to retain in hand a strong reserve (one-half of the infantry of each of its divisions), and was intended to halt at the end of the first day on a line far short of that named in Headquarters operation orders.<sup>3</sup> On the night of the 9th October, "the situation," in fact, "was not sufficiently clear to enable the Japanese Commander-in-Chief to decide when to deliver his blow."<sup>4</sup> It was not till twenty-four hours later that he "was at last in a position to formulate a more definite plan of battle."<sup>5</sup> Oyama's troops were not intended, in fact, to commit themselves to the general attack, apparently directed in orders, nor did they so commit themselves. On the contrary, the day's proceedings were limited to a reconnaissance in force carried out with considerable caution. It is quite evident, therefore, that the operation orders issued from Headquarters on the night of the 9th merely communicated formally to army commanders the general plan of the counter-stroke, which had been fully discussed with their Chiefs of the Staff at a special staff conference held at Liao-yang three days earlier,<sup>6</sup> and that either at that conference or in writing subsequently, supplementary instructions were

<sup>1</sup> *v. Official History, Russo-Japanese War*, part v. p. 29.

<sup>2</sup> *v. Ibid.* p. 58.

<sup>3</sup> *v. Ibid.* p. 35.

<sup>4</sup> *v. Ibid.* p. 29.

<sup>5</sup> *v. Ibid.* p. 38.

<sup>6</sup> *The Battle of the Sha-Ho*, translated from the *Militär Wochenblatt* by Karl von Donat, pp. 39-40.



issued imposing specific limitations on the first day's advance.

*Field Service Regulations*, part i. section 9 (1) prescribes the observance of certain general rules for the preparation and despatch of communications in the field. These rules are the product of long experience in war and at manœuvres. They need, therefore, no comment as to details.

*"The authority who despatches a communication is responsible that proper steps are taken to ensure its safe and timely delivery. Important communications should be sent by more than one means, and acknowledgment of receipt should be obtained. Communications of a secret nature should usually be in cipher, if there be any danger of their falling into unauthorised hands."*

The need of taking special precautions for the custody and transmission of confidential documents, both in peace and war, has been proved by countless mishaps. The Civil war in America was unusually prolific in such misfortunes, the staff on both sides being mainly untrained, and the cavalry enterprising. Thus, from less than a month of the period immediately preceding and following the second battle of Manassas (August–September, 1862), five notable examples may be culled. Pope's Army of Virginia, "a mere aggregate of independent units hastily put together," would in all probability have been wrecked by superior forces at Culpeper, had not a Federal patrol, on the 17th August, captured Stuart's Adjutant-General, and found on him a letter from Lee, which disclosed

the Confederate concentration.<sup>1</sup> Six days later the Federals were hit by a like mischance, a raid of Stuart's cavalry on Catlett's Station across the Rappahannock bringing back Pope's own despatch book containing detailed information as to the strength and dispositions of his forces, and as to the reinforcements he was expecting.<sup>2</sup> On the afternoon of the 28th August, Jackson's cavalry seized a mounted orderly, bearing the operation orders of the Commander-in-Chief of the Army of the Potomac for the movement of the Federal left and centre to Manassas Junction. These orders revealed a combination which was inspiring Pope with the optimistic expectation: "We shall bag the whole crowd." The arrival of the captured despatch found Jackson sleeping after a long night's march, and "roused him like an electric shock."<sup>3</sup> The only chance of saving the situation, of gaining time for Lee to come up, was to draw the whole Federal army on Jackson by instant attack. Jackson, therefore, awoke his slumbering divisions and launched them at the enemy. The fight which followed cost him a quarter of the force engaged and his best Divisional Commander, Ewell; but strategically the engagement was decisive. The miscarriage of these orders destroyed the Federal plan. Defeated a few days later at the second battle of Manassas, the Army of the Potomac took shelter under the guns of Washington.

<sup>1</sup> *The Civil War in the United States*, Wood and Edwards, p. 97.

<sup>2</sup> *Ibid.* p. 100.

<sup>3</sup> *Stonewall Jackson*, by Henderson, vol. ii. p. 143.

The fourth instance has become classic. It took place on the 13th September, and on this occasion luck befriended M'Clellan, who had resumed command of the Army of the Potomac, and was moving forward with great caution to cover Washington and Baltimore from Lee's first invasion of northern territory.

*"A Federal private discovered wrapped round a handful of cigars a copy of Lee's orders to D. H. Hill, giving full particulars of the intended movement against Harper's Ferry, and detailing the positions which the different portions of the Confederate army were to occupy for the next few days. Thus in an instant was it revealed to M'Clellan that his foe had divided his army, and that it was in his power to concentrate against either half an absolutely overwhelming force."*<sup>1</sup>

The history, indeed, of all campaigns makes clear the immense value of secrecy in war. Napoleon's most brilliant strokes were thus made possible. The French, in 1870, were perpetually bewildered by the fog of war. Cronje's commandos could not have been encircled at Paardeberg but for the care taken by Lord Roberts to conceal his design.<sup>2</sup> Oyama would have missed victory at Liao-yang and Mukden had he not deceived his opponent as to his plans. On the other hand, the filtering through of information as to Kuropatkin's offensive designs on the Sha-Ho gave the Japanese Staff warning of the impending blow,<sup>3</sup>

<sup>1</sup> *The Civil War in the United States*, p. 123.

<sup>2</sup> v. *Official History, South African War*, vol. i. pp. 432-433, and vol. ii. p. 1.

<sup>3</sup> v. *Official History, Russo-Japanese War*, part v. p. 14.

and enabled them to concentrate their armies to meet it.

“ *The object of standing orders is :*

(i) *To adapt existing regulations to local conditions.*

(ii) *To save frequent repetitions in operation and routine orders”* (*Field Service Regulations*, part i. section ii. (1)).

The most admirable example of standing orders to be found in the history of British campaigns is that of “the instructions of Major-General Crauford for marches, as issued to the Light Division in the Peninsular War.”<sup>1</sup> These orders were, it must be remembered, issued before field service manuals and regulations had been brought into being. They touched, therefore, on many points which are now dealt with in those publications; indeed, not a few of Crauford’s directions are, *mutatis mutandis*, there to be found, having at the time been embodied in the service traditions of the army, and thus preserved until incorporated in the army’s written law. Yet, even to this day, Crauford’s orders may be studied with great advantage by all officers, staff and regimental, for, whether dealing with tactics or with active service administration, they are based on principles which have since stood the test of more than a century.

The preparation and issue of *Field Service Regulations* and the manuals for each arm have curtailed the need for the promulgation by British commanders of standing orders such as those of Crauford. Yet the

<sup>1</sup> For full text *v. A Précis of Modern Tactics*, Home, revised by Pratt, 1896 edition, appendix i.

liability of the British army to service in any quarter of the globe, under varying conditions of enemy, climate, transport, supplies, and means of communication, makes it impossible to draft beforehand detailed regulations applicable to every possible theatre of war. There must of necessity be often an adaptation of the regulations to local conditions, and this can best be done by the issue of such standing orders as were promulgated by Sir Charles Warren for the Bechuana-land Expedition, 1884-5.

*"The object of an operation order is to bring about a course of action in accordance with the intentions of the commander, suited to the situation, and with full co-operation between all arms and units. So long as this object is fulfilled the form of the order is of little importance. An operation order should contain just what the recipient requires to know, and nothing more"* (*Field Service Regulations*, part i., section 12). Few things are more important in the war preparation of an army than the training of commanders and staff to the conduct of command in the field, by the issue of operation orders on these principles, and of subordinates, "not only to work intelligently and resolutely in accordance with brief and very general instructions, but also to take upon themselves, whenever it may be necessary, the responsibility of departing from or of varying the orders they may have received" (*Field Service Regulations*, section 12 (2)). The lack of clear, definite operation orders fatally hampers unity of action on the battlefield. Thus at Paardeberg :

*"Though in the divisions the commanders possessed the necessary staff for working their own commands, the officer in charge of the whole force was unsupplied with the machinery necessary for the organisation and direction of combined movements."*<sup>1</sup> This deficiency in staff gravely interfered with the communication of Lord Kitchener's directions through the proper channels of the responsible officers. Thus it came to pass that Hannay's gallant but "ill-considered charge" with a handful of mounted infantry on the Boer laager, was the only response on the eastern flank to the decision that the moment had come for a simultaneous general assault.<sup>2</sup> If a trained staff had been present to communicate this decision in the normal manner, the 18th Brigade could have co-operated, and Hannay's effort might not have been in vain. Similarly, on the western flank Lieut.-Colonel Aldworth was directed to assault with three companies of the Cornwall Light Infantry—a hopeless task attempted with splendid devotion. Had Smith-Dorrien, the G.O.C. the 19th Brigade, arranged to support this attack with a united effort of all the troops scattered on that flank on the right bank of the river, there might have been a fair chance of success. But no orders reached him, nor was he even warned that an assault was intended. The comments of the *Official History* on these miscarriages drive the lesson home.

*"The battle of Paardeberg had thus failed to achieve the success which Lord Kitchener had hoped to gain."*

<sup>1</sup> v. *Official History, South African War*, vol. ii. p. 105.

<sup>2</sup> v. *Ibid.* pp. 131-133.

*This failure may in part be attributed to the nature of the enemy's position, to his stubborn resistance, and to the diversions effected by Steyn and De Wet, but, notwithstanding these factors, it would seem probable that Cronje's main laager might have been carried during the afternoon of the 18th, had the attacks from east and west been better synchronised, and had they been delivered by a combined effort of all the troops available on each flank. . . . On no other battle during the war did the lack of a General Staff and of clearly expressed operation orders exercise a more marked influence. Few of the subordinate leaders appear to have been aware that Lord Kitchener had formulated a plan of action, and the verbal instructions delivered to them, or to those under them, failed to convey explicitly his intentions."*<sup>1</sup>

Similarly at the battle of Te-li-ssu :

*"The operations orders issued by General Stackelberg for the 15th June were not embodied in one general order, but took the form of separate memoranda indifferently worded. Units were in ignorance of the general situation, with the result that there was a lack of cohesion, and confusion ensued."*<sup>2</sup>

But the mere issue of operation orders is not sufficient. They may be so badly drafted as to fail to make clear the precise missions assigned to the units with whom they deal, or they may be so over-weighted with details as not only to paralyze subordinate leaders in their proper spheres, but to conceal from them the real intentions of the supreme com-

<sup>1</sup> v. *Official History, South African War*, vol. ii. p. 143.

<sup>2</sup> v. *Official History, Russo-Japanese War*, vol. i. p. 187 f.n.

mander. The art of writing orders is no easy one to acquire. It requires full training and constant practice. The regulations rightly prescribe the observance of a certain form. Uniformity in method both ensures the inclusion in all orders of essentials, such as the general situation, the intentions and position of the commander, etc., and enables the recipient to grasp more readily the order itself as a whole. But the form is not very important. The essence of the whole matter is definiteness and brevity. The recipient must be told all that he wants to know and no more.

The general principles governing the issue of orders in the German army in 1870-71, and the Japanese army in 1904-5, have been already touched on. The lucidity and brevity of their text is no less admirable. Take as examples the march orders issued from the German Royal Headquarters on the afternoon of the 12th of August, 1870,<sup>1</sup> the vital order telegraphed from Tokio on the 24th of June, 1904, notifying the uncertainty of the over-sea communications and postponing the battle of Liao-yang until after the rains ;<sup>2</sup> Kuroki's orders of the 22nd of August for the advance of his army to seize the watershed between the Lan-Ho and Tang-Ho ;<sup>3</sup> Oyama's attack order for the 12th of October,<sup>4</sup> and those for the reforming of his three armies on the 15th of October.<sup>5</sup> Each of these is a

<sup>1</sup> *Official History, Franco-German War*, Clarke's translation, vol. i. p. 293.

<sup>2</sup> *Official History, Russo-Japanese War*, vol. i. p. 231.

<sup>3</sup> *Ibid.* part iv. p. 13.

<sup>4</sup> *Ibid.* part v. p. 62.

<sup>5</sup> *Ibid.* part v. p. 147.



model in the clearness and simplicity with which subordinate commanders are assigned their respective duties, and in the entire abstention from any attempt to prescribe the manner of their execution. The freedom thus conferred on subordinates enabled Alvensleben to attack the greatly superior French forces at Vionville on the 16th of August, 1870, and von Voigts Rhetz to come to his assistance, although the actual mission assigned to both their army corps that day was to press the enemy's retreat towards the Meuse ;<sup>1</sup> it enabled Kuroki to throw half his army across the Tai-tzu-Ho on the 30th of August, 1904, an audacious stroke which induced Kuropatkin to abandon his intended counter-attack southward and commence that withdrawal which led to defeat ;<sup>2</sup> it permitted, again, Kuroki on the 13th of October, during the battle of the Sha-Ho, to detain for more urgent tasks the 1st Guards and 23rd Brigade, although ordered by Headquarters to despatch both those units with the 3rd Brigade "to cut off the retreat of the enemy in the direction of Li-shu-ti-hsia."<sup>3</sup> Yet this freedom meant no relaxation of battle discipline. Steinmetz lost his army command for his indiscretion at Gravelotte. The lack of enterprise of the 5th Japanese Division on the 11th of October relegated that unit to the reserve for the rest of the Sha-Ho battle.

<sup>1</sup> *v. Official History, Franco-German War*, vol. i. pp. 354, 362, 392.

<sup>2</sup> *v. Official History, Russo-Japanese War*, part iv. p. 78.

<sup>3</sup> *v. Ibid.* part v. pp. 106-7. I am venturing in this observation to diverge somewhat from the comment in the official text, as para. 3 of Kuroki's orders for the 13th appears not wholly reconcilable with paras. 1 and 3 of Oyama's.—E. A.

Yet the spirit in which orders on a modern battlefield should be carried out is very different from that of past days. Wellington placed under arrest a R.H.A. captain for advancing his battery without orders, although the tactical situation justified the movement.

The General Staff now not only point out that :

*"Notwithstanding the greatest care and skill in framing orders, unexpected local circumstances may render the precise execution of the orders given to a subordinate unsuitable and impracticable."*

But they proceed to prescribe that :

*"Departure from either the spirit or the letter of an order is justified if the subordinate, who assumes the responsibility, bases his decision on some fact which could not be known to the officer who issued the order, and if he is conscientiously satisfied that he is acting as his superior, if present, would order him to act."*

*If a subordinate, in the absence of a superior, neglects to depart from the letter of his orders, when such departure is clearly demanded by circumstances, and failure ensues, he will be held responsible for such failure"* (Field Service Regulations, section 12 (13) ).

Yet with the modern system of limiting an order to the assignment of tasks to commanders and leaving to them the method of execution, the need for disregarding the letter of an order will not often arise, still less for disregarding its spirit, provided the authority issuing the order does not vacillate. Of all faults in command, vacillation is the worst. The vacillation of Kuropatkin at the Sha-Ho and at Mukden made his defeat inevitable. Von Moltke's

maxim, that "change in an order after issue is sometimes unavoidable, but always an evil,"<sup>1</sup> should be stamped in prominent letters on every commander's and staff officer's despatch book. A series of orders and counter-orders wastes the energies of the troops, undermines their efficiency by depriving them unnecessarily of rest and food, creates mistrust and confusion, and consumes that indispensable factor of success on the battlefield, time. The loss of the services of the 2nd Siberian Corps at a critical period of the Sha-Ho battle has been already narrated. Prince Kraft records how on the march to Sedan many battalions of the Guards Corps throughout the 30th of August had no meal owing to two changes in the early morning of orders issued to them at midnight.<sup>2</sup> Similarly, owing to a change in orders many British soldiers fought all day fasting at the Modder.<sup>3</sup>

Time is, in other respects, an important point for consideration in the issue of orders. The Staff should never forget that regimental commanding officers are the actual executive officers, and that to reach them the orders of General Headquarters have to permeate through the channels of Army Headquarters, Divisional Headquarters, and Brigade Headquarters. Time, therefore, must be allowed not merely for actual transmission, but for consideration at each of these, and for the drafting of their own orders. It is impossible, of course, to issue operation orders in the

<sup>1</sup> Quoted in *Précis of Modern Tactics*, p. 120.

<sup>2</sup> *Ibid.* pp. 120-127.

<sup>3</sup> *Official History, South African War*, vol. i. p. 247.

field with the same fixed regularity as routine orders (v. *Field Service Regulations*, part i. section 14 (2) ), but that some approximation to regularity can be attained is proved by the fact that throughout the battle of Sha-Ho operation orders were only issued once every day by Japanese General Headquarters, in the afternoon or evening, and that as the battle progressed, and the urgent need of staff and troops for rest increased, the time of issue grew earlier. The *Official History* gives the following times of approximate receipt or actual receipt :

General Headquarters Orders for	Time of reception of issue.
10th October	Received by 2nd Army 11.30 p.m., 9th.
11th "	" " midnight, 10th.
12th "	" " 10.5 p.m., 11th.
13th "	" " 7.50 p.m., 12th.
14th "	Not stated: 1st Army's consequent orders issued at 11.30 p.m., 13th.
15th "	Issued from General Headquarters at 4.30 p.m., 14th.

A marked contrast this to the methods of Russian General Headquarters, from which apparently there was no regular issue of operation orders, but a spasmodic sending out at all hours of the day and night of special directions to this and that individual commander, without regard to whether he was or was not under the direct control of the Commander-in-Chief.

Hitherto written orders only have been considered. *Littera scripta manet*. The verbal message is proverbially unsafe. Yet verbal messages or verbal orders must often be used in action, though they have often

miscarried. Thus, on the 11th of October, 1904, during the battle of the Sha-Ho, the 2nd Guards Brigade, though in a hot corner on hill 774, was ordered to detail a detachment to attack westward and thus assist Matsunaga's brigade, which was being held in check on the Guards' left flank. With some difficulty two battalions were spared, and were on the point of being launched on this mission, when a verbal message arrived by an orderly from Matsunaga, that he was compelled to fall back before superior force. The move of the battalions was, therefore, counter-ordered. Later, however, it transpired that the wrong message had been delivered; its real purport had been that without some assistance from the Guards' Division, Matsunaga could not advance.<sup>1</sup> The despatch of a verbal message on an important matter from one General Officer to another would seem indeed inexcusable. Regimental orders and messages are a different matter. In the regimental unit, when orders and messages can be given *direct* by the issue to the recipient, they will pass normally by word of mouth. In the firing line, moreover, the verbal *transmission* of orders and messages from squad commanders to squad commanders is constantly unavoidable. As to this, detailed instructions are given in *Infantry Training*, section 127 (5).

<sup>1</sup> v. *Official History, Russo-Japanese War*, part v. p. 47.

## CHAPTER XV.

### MOVEMENTS BY LAND AND SEA.

#### *Strategical Concentration.*

THE war plans of all modern States contemplate that before coming into contact with the enemy their field armies should undergo two processes: mobilization and strategic concentration. Mobilization is, as a rule, carried out at the peace station of each unit, whether staff, combatant, or non-combatant, the unit being thus completed in men, animals, vehicles, and equipment to its full war establishment, and made ready in itself to take the field. In armies, such as our own, where a proportion of the units which make up brigades and divisions are normally quartered in peace time at out-stations, an intermediate process of assembling the higher organization follows that of mobilization. The division or army corps being assembled, the forces are thus further organized for purposes of command into armies, and then concentrated or deployed in the theatre of operations in such manner as strategical requirements demand.

This last process "*is effected by sea, by rail, or water, or by road, or by a combination of these means.*"

*In the case of operations conducted outside Great Britain, the concentration must be begun by sea, whilst it may be necessary to complete it either by rail, water, or road."*<sup>1</sup>

The process of mobilization cannot, as we have seen in a previous chapter, be carried out smoothly and swiftly unless carefully planned and thought out in every detail during peace. No less vital to initial success in war is the planning of strategic concentration, for on the soundness of the conception on which the plan is based and the accuracy of the calculations of its details may depend the whole subsequent issue of the campaign. Especially will this be the case when, as in a modern continental war, the trained manhood of one State is arraigned in great national armies against the trained manhood of another. Each will stake all its resources on the opening struggle. The enormous forces facing each other will preclude much manœuvring. The strain, both material and moral, which such a situation will impose on both States will compel an early and decisive solution. A blunder at the outset will be, therefore, irreparable. Von Moltke's exposition of this truism cannot be bettered :

*"One of the principal duties of a General Staff in peace is the preparation of detailed plans for the concentration and transport of the troops, with a view to meeting all the probable eventualities to which war may give rise.*

*When an army first takes the field, manifold political and geographical considerations, as well as military, have*

<sup>1</sup> *F.S. Regulations*, part i. section 23 (1).

to be weighed. Errors in the original concentration of the army can scarcely ever be made good during the course of the campaign. All these arrangements, however, may be considered long beforehand, and—assuming the troops are in readiness for war and the transport service organised—must lead to the result which is contemplated.

It is otherwise with the subsequent task of strategy, that is to say, with the adaptation of the means thus prepared to the purposes of war—the operations. In this case, we have to grapple with the enemy's opposition. It may, of course, be limited in its effects by our ready and resolute initiation, but it cannot be crushed except by battle.

The material and moral consequences of every great battle are of so comprehensive a character that they commonly produce an entire change in the situation, and with it a fresh starting point for new measures. No plan of operations can, with any safety, include more than the first collision with the enemy's main force. It is only the laity<sup>1</sup> who believe that they can trace throughout the course of a campaign the prosecution of an original plan, arranged beforehand in all its details and observed to the very close. The Commander-in-Chief will, undoubtedly, in spite of the changing fortunes of war, always have the main object of the campaign before his eyes, but the means by which he hopes to attain it cannot be sketched out with certainty long beforehand.”<sup>2</sup>

<sup>1</sup> Or, as Foch translates, “un homme étranger à toute notion d'art militaire,” v. *De la conduite de la guerre*, p. 21.

<sup>2</sup> v. *The Franco-German War, 1870-1871*, Clarke's translation, vol. i. pp. 49-50.



Napoleon, indeed, recognizing the limitations which von Moltke thus set forth, of plans of campaign, declared once that he had never had a plan of operations. Yet no one ever planned war more systematically or with more brilliant success. He refused, it is true, to tie himself with any plan beyond the first decisive move. But he had his plan of war, the concentration which would enable him to strike his first blow at the enemy taken at a disadvantage, the objective, the main purpose, which he determined on from the beginning, for which he fought his first battle, and which subsequently he pursued with relentless determination until it was attained.<sup>1</sup>

For an Island Power, the centre of a great and scattered Empire, the study of the problems of war is of as vital consequence as that for a Continental Power, and yet an infinitely more complicated matter. Moreover, the factors of the problem of strategic concentration are very different. For the Continental State, the urgent eventualities for its land forces are limited, as a rule, to the possibility of conflict with its immediate neighbours. In such contests the issues will probably be vital. National freedom or, at any rate, national honour will be at stake, and will be hazarded by any mistake or miscalculation in the plan for war. But for strategical concentration, the conditions will, as a rule, be assured and comparatively simple. Concentration must immediately follow mobilization. Political and

<sup>1</sup> v. *The Franco-German War, 1870-1871*, Clarke's translation, vol. i. p. 23.

geographical considerations limit very precisely the choice of areas available for strategical distribution. The use of the railways and roads leading to these areas can be safeguarded, or is only in danger of interruption if the enemy handicaps his chances of success by premature attack with incompletely mobilized forces. Finally, unless the State in question is in the unhappy position of being too weak to assume the offensive, the primary aim of its strategic distribution will be to seize at once the initiative—in other words, its object is not adaptability to defence against a variety of possible attacks, but readiness for an advance, which shall compel the enemy to readjust his own plan in conformity with the movements of his opponent.

An Island Power can in no eventuality of war enjoy all these advantages simultaneously. For in one only, that of home defence, is its situation somewhat analogous to that of the Continental Power. Even in this, although the advantage of assured communications with the area or areas selected for strategic concentration is secured, yet both in time and duration the initiative rests of necessity with the enemy. The invader's gain in that respect is, however, counter-balanced by the limitation of his striking force imposed by sea transport, and still more by the uncertainty of his over-sea communications, unless maritime command can be assured. All other war problems for the employment of the land forces of an Island Power involve the despatch of an expeditionary force across the seas, and are thus obviously subject to these

same limitations of sea transport and sea command. Whether disembarkation is to take place in friendly territory or in hostile territory, whether the landing-places selected will be guarded or undefended by the enemy, the possession of sea command, either local and temporary or absolute, is an essential which must be possessed before the expeditionary force can safely use the highways of the ocean. A detachment, it is true, may conceivably be risked without sea command, but the Government of no civilised State could face the obloquy of any large proportion of its national army being sunk or captured on the high seas, even if it could afford strategically to chance so great a disaster. The risk of embarkation, with only local or temporary command of the water-ways, is another matter. The State that incurs it must face the possibility of subsequent grave strategic embarrassment and even of final disaster. But it is a risk of a different character, and one which has in the past been incurred, notably in the Russo-Japanese war, and will again be willingly faced, should the chances of success be sufficiently good, and the gain, if success be attained, commensurate.

Sea command, though a vital matter, is not the only important point in strategic distribution across the seas. Disembarkation is an infinitely more difficult process than detrainment, unless the conditions are exceptionally favourable. In South Africa we were so favoured. We had the secure use of four great ports, Table Bay, Port Elizabeth, East London, and Durban, all on loyal British territory, all equipped

with those landing facilities which habitual trade with large ocean-going steamers affords, and all connected with the theatre of war by separate lines of railway. But when these advantages do not exist, when disembarkation in a hostile country is unavoidable, then :

*"The first objective will usually be the capture of a suitable harbour to serve as a base of operations, and it will, as a rule, be necessary to undertake a combined naval and military operation, and to land a force on the open beach in order to seize the port from the land side"* (Field Service Regulations, section 22 (2) ).

Thus, Wellesley, although obliged to make his first landing in the Peninsula in the ill-protected estuary of Mondego, always aimed at securing later the harbour of Lisbon. The British and French forces, landed on the open beach in the Crimea, as soon as possible, *i.e.* immediately after the battle of the Alma, secured Balaclava and Kamiesh harbours. The Italian fleet, in 1911, silenced the forts of Tripoli and drove out their Turkish garrison before the Italian expeditionary force was landed or had even left Italy.

Yet even in this last case a considerable portion of the Italian forces was landed on the open beach. Such landings are, in fact, the rule rather than the exception for expeditionary forces disembarked on a hostile coast.

*"The harbours will probably be in occupation of the enemy—unless, owing to the circumstances of the case, the adversary can offer no military opposition. . . .*

*Harbours of the first class are, indeed, very often fortified."*<sup>1</sup>

The Crimean landing, Abercromby's gallant disembarkation on the beach of Aboukir Bay, the landing of the French expeditionary force in Algeria on the open coast of Sidi,<sup>2</sup> of the Americans in the Spanish-American war on the sandy beach of Daiquiri,<sup>3</sup> and of the Japanese near Pi-tzu-wo, in November, 1894, and again at Yang-sheng Bay in the vicinity of Wei-hai-Wei, in the following January, are all examples of such disembarkations.

On the other hand, to this rule history produces exceptions :

*" Wolfe, in 1759, landed far up the estuary of the St. Lawrence, only a mile or two below Quebec. Napoleon landed at Alexandria. And the numerous descents of Federal armies upon the shores of Virginia, during the War of Secession, were made within the creeks and bays and estuaries opening out upon that huge land-locked arm of the sea, the Chesapeake."*<sup>4</sup>

The best modern example of over-sea strategical concentration, indeed the greatest example in history, is that of the Japanese in 1904. The facts will probably be clear in most readers' minds, but it may be desirable to recapitulate the main points, so far as they illustrate general principles.

<sup>1</sup> *Military Operations and Maritime Preponderance*, by Colonel C. E. Callwell, p. 223.

<sup>2</sup> *v. Ibid.* p. 224.

<sup>3</sup> *v. Letters on Amphibious Wars*, by Brigadier General Aston, p. 124.

<sup>4</sup> *Military Operations and Maritime Preponderance*, by Colonel C. E. Callwell, p. 224.

The first which presents itself is very important—the initial uncertainty of sea command. The primary aim of von Moltke's project for the invasion of France in 1870 was "to seek out the enemy's main force, and, when found, to attack it."<sup>1</sup> The Japanese Staff set before them a like aim.

*"During the year 1903 Major-General Flug, temporarily employed on the staff of the Viceroy, Admiral Alexeiev, presented a special report upon "The Strategic Distribution of the Manchurian Army," in which the country round Liao-yang was marked as the rayon for the concentration of all the forces in Southern Manchuria in case of war with Japan, and for such reinforcements as might be sent out. This report, which may have influenced the naval authorities in the choice of their principal base, was submitted to General Kuropatkin, who was then War Minister, and was finally approved in the highest quarters. Whether the existence of General Flug's paper was known to the Japanese or not is uncertain, nor is it of great importance, for there is no doubt that an exhaustive study of the conditions led them to believe that Liao-yang was the point at which the first great battle against the Russian main army would be fought. This, therefore, was the idea which underlay their land strategy from the outset of the war, and true to their German teaching, they resolved that from the first their troops must be deployed upon the mainland of Manchuria in such a way as to enable them to envelop the enemy at Liao-yang. It was clear, however, that at the outset the sphere of possible*

<sup>1</sup> *Franco-German War*, vol. i. p. 50.

*military operations would be strictly limited by the naval conditions."*<sup>1</sup>

Thus, "the whole issue of the coming struggle, if the question of finance be excluded, evidently depended upon sea supremacy."<sup>2</sup> And this at the outset was by no means assured, for on paper the Japanese fleet was slightly inferior to the Russian sea forces in the Far East. Two alternative plans for strategic concentration were, therefore, prepared, "the choice between them being dependent upon the degree of success which the fleet might achieve during the first few hours of the war."<sup>3</sup> If the Japanese fleet should establish its superiority at the outset, troops were to be sent at once to occupy the harbour of Chemulpo on the west coast of Korea. If sea command remained doubtful, the 12th Division was to land at Fusan, the port at the south-eastern corner of Korea, to which access across the narrow Korean Straits was assured, and thence advance to Seoul, the Korean capital, eighteen days' march distant.

The surprise of the Russian fleet at Port Arthur by the Japanese destroyer flotillas on the night of 8th-9th February, and the destruction of the "Varyag" and "Koreetz" by Admiral Uriu at Chemulpo on the following day, placed Chemulpo harbour at the disposal of the Japanese, and rendered safe the transportation to that port of the 12th and half the 2nd Divisions. Their disembarkation was completed by 22nd February. Early in March the

<sup>1</sup> *v. Official History, Russo-Japanese War*, vol. i. p. 405.

<sup>2</sup> *v. Ibid.* p. 46.

<sup>3</sup> *v. Ibid.* p. 70.

approach of spring melted the ice from Chinampo, a port further north. There the remainder of the 1st Army was disembarked. On the 1st May, that army fought the battle of the Yalu and, entering Manchuria, pushed on to Feng-huang-cheng, "where it was in a position to threaten the communications of any force which might be sent from Liao-yang towards Port Arthur."<sup>1</sup> Meanwhile, Admiral Togo had been straining every nerve to secure more completely the over-sea communications by blocking the mouth of Port Arthur harbour. On the 3rd May he was able to cable to Tokio that "the harbour entrance appears to have been completely blocked to the passage of cruisers and larger vessels."<sup>2</sup> Subject only, therefore, to the chance of attack by torpedo boats, the way seemed now open for the landing in the theatre of war of the bulk of the Japanese military forces; but it had also become evident that the destruction of the Russian fleet, which was essential to the complete attainment of command of the sea, could only be brought about by the capture of its shelter, the fortress of Port Arthur. Thus, from henceforth there were two objectives for the Japanese land forces, the Russian field army at Liao-yang, and the fortress at the southern apex of the Kuan-tung Peninsula. No harbour was yet available for the disembarkation of the next echelon of troops. An open beach at Pu-tzu-wo, but sixty miles east of Port Arthur, was therefore selected. There, during the

<sup>1</sup> *v. Official History, Russo-Japanese War*, vol. i. p. 406.

<sup>2</sup> *Ibid.* p. 134.



5th-13th May, the 2nd Army (1st, 3rd, and 4th Divisions), under command of Oku, was disembarked, and by the 23rd was reinforced from Japan by the 1st Cavalry Brigade and the 5th Division. On the 26th the battle of Nan-shan closed finally for the Russians the northern issue from the Kuan-tung Peninsula, and secured for the Japanese land forces the much needed harbours of Ta-lien-wan and Dalny.

Meanwhile, on the 19th of May, and following days, the 10th Division had disembarked on the open beach at Ta-ku-shan, a place about equi-distant between Pu-tzu-wo and the mouth of the Ya-lu, and by the end of the month another division, the 11th, had landed ten miles south of Pu-tzu-wo.

The higher organizations were now rearranged: The 1st Army, under Kuroki, remained as originally constituted. Oku's 2nd Army was reformed with the 3rd, 4th, and 6th Divisions. To these the 5th Division was added temporarily, though ultimately designed to unite with the 10th Division, the two becoming the 4th Army, under Nodzu. The 1st and 11th Divisions formed the 3rd Army, under Nogi. To that army was assigned the honour of attacking Port Arthur. To the 1st, 2nd, and 4th Armies fell the duty of dealing with the Russian main field army. The final strategic concentration of Oyama's forces was not, however, achieved until those three armies joined hands with each other in front of Liao-yang in August. The war had then lasted for six months. The strategic deployment of the various groups of divisions, from which the four armies ultimately developed, may be said to

have been completed as they moved forward into the theatre of war after disembarkation. Its accomplishment extended, therefore, over a period of three and a half months from the date of the outbreak of the war.

In this great example of an Island Power gradually developing the full strength of its land forces in an over-sea theatre of war, in conformity with a sound and carefully worked-out strategic plan, we have illustrated all the more important principles which should govern such operations. The caution of the authorities in drawing up at the outset alternative plans, instead of gambling on the uncertainty of the maritime situation, has been already touched on. The success of the navy in the first twenty-four hours of the war was taken full advantage of. But even then no unnecessary risks were incurred. The subsequent disembarkations at Pi-tzu-wo and Ta-ku-shan were deferred until the closing of the harbour mouth of Port Arthur was judged to be absolute. The two services—naval and military—worked hand in hand. Each was the complement of the other. The success of the one was immediately followed by the advance of the other. And though these steps forward were made with the utmost resolution and firmness, yet each step was made good before another was ventured.

The apparent smoothness with which the disembarkation of these large forces on open beaches was carried out must not be allowed to obscure the difficulty of such enterprises.

At Pi-tzu-wo "but 3000 yards of shore were available for landing purposes. The transports had to lie about three miles off the shore. There was no shelter from the prevailing wind, while close in shore there were many rocks. At high water the troops landed at wharves, constructed in the first instance by the Engineer battalion, and subsequently by civilian carpenters from Japan. At low water the lighters were grounded, and the troops waded ashore, the guns and wagons being run along planks over the sterns or sides of the lighters, and hauled ashore."<sup>1</sup>

Moreover, "At low tide all stores had to be carried on men's shoulders across a muddy foreshore from a quarter of a mile to two miles wide."<sup>2</sup>

Yet, "Although a strong south-east wind was blowing and the sea ran high, the work of disembarkation was carried on day and night."<sup>3</sup>

It is manifest that difficulties such as these could only be overcome by previous reconnaissance, exact calculation, thorough organization, a clear mutual understanding between the naval and military staffs. Yet with all this, Oku's army had to fight at Nanshan, thirteen days after his divisions were landed, with an incomplete ammunition supply. The need, therefore, of obtaining as soon as possible a good harbour for use as a base is very evident.

The time requisite to collect and adapt ordinary mercantile shipping for use as military transports is an all-important factor in the drafting of strategic

<sup>1</sup> v. *Official History, Russo-Japanese War*, vol. i. p. 138 f.n.

<sup>2</sup> *Ibid.* p. 151.

<sup>3</sup> *Ibid.* p. 138.

plans for over-sea action. The French Staff, in 1870, planned the assembly of an expeditionary force of 30,000 men at Cherbourg for a raid against the Baltic coast, but, having failed to give the naval authorities sufficient notice to get ready the necessary sea transport, had, to their mortification, to abandon the enterprise.<sup>1</sup>

No power, other than Great Britain, with her complete sea command, immense resources in mercantile shipping, and magnificent harbours and docks, both at home ports and in South Africa, could have grappled with the over-sea transport work carried out by the Admiralty during the South African war. From the commencement of that campaign until 31st December, 1902, no less than 1027 transports, troop freight ships, and remount freight ships were employed, and during that period these ships carried 804,692 persons, 459,336 animals, and 1,374,070 tons of stores (inclusive of wagons, guns, baggage, and equipment accompanying the troops, and a very large quantity of supplies delivered direct by contractors).<sup>2</sup> Yet the largest shipment of troops made in any one month from England was but 33,500 men and 5500 horses, conveyed in February, 1900.<sup>3</sup> These figures are for a voyage of 6000 miles, a very different matter from a voyage of a few hours; but they serve to illustrate the difficulty of such undertakings. However numerous the mercantile marine of a State, the strength of it available for the transport of an army is limited to

<sup>1</sup> *v. De la conduite de la guerre*, par le Colonel F. Foch, p. 89.

<sup>2</sup> *v. Official History, South African War*, vol. i. pp. 108-9.

<sup>3</sup> *Ibid.* p. 107.

the number of properly fitted ships that can be made ready at a given moment.<sup>1</sup> Steamers engaged in ordinary mercantile trade cannot at an hour's notice be adapted to the special requirements of an army. Time is needed to place in them the necessary fittings for men, animals, guns, and vehicles, even if these fittings have, as was the case in the South African war, been prepared beforehand. If they have not been prepared, still further delay is inevitable. Especially is this the case if a landing on an open beach is contemplated :

• “ *In these days merchant ships can usually go alongside quays, where cranes on land pick the heavy weights out of them, and consequently few of them carry appliances to hoist out anything of great weight ; even if steam launches are put into them at the port of embarkation, they cannot for this reason be hoisted out again in an open anchorage.* ” <sup>2</sup>

The importance of peace preparation in such matters is further enhanced by the strategical importance of rapidity and secrecy in the despatch of over-sea expeditions.

“ *The proper time for such expeditions is at the very beginning of hostilities, when all the field troops are on their way to the frontier, and the interruption would, therefore, be most effective, or quite at the end of the operations against a defensive already exhausted and weary of the war.* ” <sup>3</sup>

<sup>1</sup> *Official History, South African War*, vol. i. pp. 100-103.

<sup>2</sup> *Letters on Amphibious Wars*, Aston, p. 116.

<sup>3</sup> *The Conduct of War*, by Lt.-General von der Goltz, Lieut. Dickman's translation, p. 215.

*“ Without secrecy, the advantages to the power moving troops by sea are much curtailed, and the military forces landed on the coast may meet with opposition which may cause the failure of the whole plan.”*<sup>1</sup>

In recording this very sound observation, Sir George Aston points out that our own record for keeping strategical plans secret in this country is not good. The Walcheren expedition he quotes as a notorious instance of the objective of an expeditionary force becoming an openly gossiped secret months before the force started. The Japanese in their last war showed us a better way, but it is a way only possible in a democratic country, if the patriotism of the Press and of the public is sufficient to enable the authorities to control strictly the dissemination of naval and military intelligence before war commences.

The question of the actual sea tonnage needed for the transport of an over-sea expedition is of much interest to this country, and a year or two ago was the subject of warm controversy. For the British service the gross tonnage allowed<sup>2</sup> is :

	For an ocean voyage.	For a short voyage.
Per man      -   -   -   -   -	4	2
Per horse    -   -   -   -   -	12	8

In the Japanese service the allowance for a twenty-four hours' voyage is but one and a half tons per man and two tons per horse. For a week's voyage double

<sup>1</sup> *Letters on Amphibious Wars*, Aston, p. 254.

<sup>2</sup> *v. Field Service Pocket-Book*, 1911, p. 169.

that accommodation is allowed.<sup>1</sup> The 2nd Japanese Army (three divisions and the 1st Artillery Brigade) was conveyed to Pi-tzu-wo in about eighty transports,<sup>2</sup> though these vessels had to return to Japan for the ammunition column, field hospitals, and supply columns.<sup>3</sup> The usages and requirements of armies in this matter vary, in fact, with their standards of sanitation and their normal manner of living. But for all armies the determining factor is the length of the voyage.

An expeditionary force landing in a friendly country which possesses railways, will depend mainly on that means of movement for the transport of its troops from the ports or port of disembarkation to the actual theatre of war. The three railways leading from the Cape coast ports to the interior, the Natal line, and even, to a certain extent (under an agreement made with Portugal some years before the war), the Beira-Salisbury railway, were so used in the South African war. An expeditionary force landing in a hostile country cannot expect this advantage, although, when the force is a small one, it will nearly always be essential to its maintenance and supply in subsequent operations that a railway should be seized and adapted for use, or, if that be not possible, that a new military line should be constructed. In Manchuria both these measures were forced upon the Japanese Staff. For the concentration of the armies of a Continental Power for the defence of its frontiers, or for operations beyond

<sup>1</sup> *Letters on Amphibious Wars*, p. 223 ; v. *Ibid.* pp. 22-26.

<sup>2</sup> *Ibid.* p. 295.

<sup>3</sup> *Ibid.* p. 296.

those frontiers, railways are, under modern strategical conditions, absolutely indispensable. The consummate skill with which Napoleon, in 1805, moved by march route 200,000 men from Brest, Boulogne, Paris, Hanover, and Holland, concentrated them on the Rhine in a month, and twenty days later out-maneuvred and encircled the unhappy Mack, was a masterpiece of staff work, illustrating for all time the brilliant results obtainable from secrecy and exactness in strategical concentration.<sup>1</sup> But, though, "*If a large force is to be moved a comparatively short distance,*" it is still quicker to complete its concentration "by road, yet, "*as the distance increases it becomes more expeditious to use railway transport.*"<sup>2</sup> Time is an all-important factor in every military operation, but perhaps most of all in the strategical concentration, for upon it will depend whether the initiative can be seized or must be left to the enemy.<sup>3</sup>

Thus, the development of railways for strategic use forms an all-important factor in national war preparations for States concerned with the defence of land frontiers. In 1870 nine lines of railways were available for the strategical deployment of the North and South German troops, besides four subsidiary lines, which could be used for the movement of troops from the northern provinces of Prussia to the main lines. Not a few of these lines had been planned

<sup>1</sup> An excellent study of this concentration will be found in the *Art of Marching*, Colonel A. G. Furse, pp. 57-73.

<sup>2</sup> *Field Service Regulations*, part i. section 22 (4).

<sup>3</sup> Compare also *Field Service Regulations*, part ii. section 25 (1).



or improved for strategical purposes, and the whole arrangements for their use on mobilization had been worked out in detail with complete thoroughness by the railway section of the Prussian General Staff. Careful allotment of the several lines to the armies and army corps, ensured that "*none would remain unused, no matter for how short a time, and thus the fullest amount of work would be realised from all. . . . The daily work of a single line of railway was fixed at twelve trains, of a double line, eighteen; the transport of a corps would, it was estimated, take three and a half to five and a half days.*"<sup>1</sup> "*Time-tables had been worked out for each regiment. . . . There was ample railway material.*" Thanks to these preparatory measures, the strategic concentration of the German armies was effected with perfect smoothness and in exact conformity with the time forecasts of the Staff.

On the other hand, "*The railways of France did not readily lend themselves to a movement of concentration on the frontier. There are only four which, traversing the interior of France, approach the menaced boundary: those which issue by Thionville, Saarguemines (incomplete from Verdun to Metz), Strasburg and Belfort.*"<sup>2</sup> The capacity of these lines would in any case have probably been overtaxed even had a proper system of mobilization existed at that time in the French army. But the appalling defects in

<sup>1</sup> *v. Franco-German War*, German Official Account, Clarke's translation, vol. i. p. 58.

<sup>2</sup> *La Guerre de 1870-71*, vol. ii. p. 17.

the French mobilization system made a railway breakdown inevitable. Some idea of what these defects were may be gathered from a letter of July 29, 1870, quoted in the French General Staff's *Official History*, in which the French War Minister notifies to the Chief of the Staff the despatch in three days of detachments of reservists, amounting in all to 24,940 men, to ninety-one different units, scattered in eleven different places from Paris to the frontier.<sup>1</sup> It is not surprising, therefore, that "*The railways were in all directions encumbered by trains moving in disorder or not moving at all—it became apparent that the advantage of the initiative would remain with the Prussians.*"<sup>2</sup>

The Japanese strategic concentration in Manchuria afforded, as we have seen, valuable lessons in the transport from over-sea of large armies and their gradual deployment in the theatre of war. On the other hand, the Russian concentration in that campaign is a unique example of the gradual building up of an army by rail, under circumstances of extraordinary difficulty.

At the outset, Russia's local military strength was but 126,000 field, fortress, and railway troops in the districts menaced by the enemy. At the conclusion of the war she had over half a million of armed men in the field. The assembly in Manchuria of this enormous force, as well as its maintenance in equipment, and to a certain extent in supplies, was dependent on a single line of railway 5000 miles in length, and,

<sup>1</sup> *Operations of War*, Hamley, p. 321.

<sup>2</sup> *Ibid.* p. 224.

at the commencement of the war, broken at Lake Baikal. On that lake there were then two special steamer ferries, the "Baikal" and the "Angara," the former capable of carrying on three pairs of rail laid along her main deck twenty-five to twenty-eight railway carriages with their loads, and of making the double journey five times in two days; the latter not fitted for railway plant, but capable of carrying some 1500 men packed like sardines.<sup>1</sup> But in February, when the war commenced, the lake was frozen too hard for army ice-breakers. The infantry had, therefore, at first to march the twenty-five miles from shore to shore, their kits and luggage being carried in sledges.

*"The section of line eastward of Lake Baikal was short of rolling stock, and the distance apart of the places where trains could pass each other, the governing factor in calculating the maximum of trains which can pass along a single line, was as much as twenty-one to twenty-five miles. . . . At first only three trains could be run each way every twenty-four hours, and only two of these could be military trains on account of the number required for railway material and so forth. Each train, according to the German General Staff, would take about 500 men, and a rest day was required every three or four days. . . . The average speed on the through journey was about six miles an hour, including halts, so that the journey from Warsaw to Mukden took about forty days."*<sup>2</sup>

<sup>1</sup> *War in the Far East*, by the military correspondent of the *Times*, p. 189.

<sup>2</sup> *Letters on Amphibious Wars*, Aston, pp. 225-6.

Gradually, however, thanks to the energy and splendid organizing power of Prince Khilkoff, these conditions were improved. By the end of February, 1904, a line of rails had been laid across the ice, and, though unfit to bear locomotives till the third week in March, 1300 railway carriages were sent across before that date. By the 28th March, sixty complete troop trains, with engines, had crossed. But from the 13th April to 7th May the melting of the ice stopped further traffic. On the latter date the ferries resumed work. By the 25th September a new loop line, a hundred miles long, had been finished round the lake. Meanwhile the work of putting in additional sidings was being pressed on with :

*"By the end of the year ten trains could be worked in each direction, and by the end of the war fourteen could be sent as far as Harbin, and eighteen to the southward of that place."*<sup>1</sup>

The success of this railway work was so great as to affect seriously the forecasts of the Japanese General Staff, nullifying the anticipation that the completion of the Japanese strategic concentration at Liao-yang would find them enjoying the advantage of numerical superiority. Curiously enough, the Russian Staff had erred in the other direction in forecasting that six Japanese divisions could be embarked simultaneously for a voyage of forty-eight hours, and nine for a shorter period, an excess in estimate of more than 100 per cent. Accurate forecasts of the actual fighting strength which an enemy can place and maintain in

<sup>1</sup> v. *Letters on Amphibious Wars*, Aston, p. 232.

"a given theatre of war" are, in fact, by no means so easy to make as the lay mind imagines. It is wise to avoid any optimism favouring our own plans, and to leave a good margin on all doubtful points.

## CHAPTER XVI.

### MOVEMENTS BY LAND AND SEA (CONTINUED).

#### *The Forward Movement from the Area of Concentration.*

STRATEGIC concentration or deployment having been completed, the field armies in their further advance must rely mainly on their marching powers. Railways have, it is true, been used occasionally to bring up troops to the battlefield. Three of Johnston's brigades were trained to Manassas junction to reinforce Beauregard during the two days preceding Bull Run. The railway between Ladysmith and Dundee and between Ladysmith and Maritzburg was similarly used by Sir George White to despatch reinforcements to menaced points during the first fortnight of the South African war. But such use is rare, and it is impossible to move large forces in this manner in the vicinity of the enemy. Yet the vital importance of railway communication to the armies in the field does not terminate with strategic concentration. The great numerical strength of modern armies, and the greater regard for the civilian population of a theatre of war, which the modern standard of humanity enforces, make the Napoleonic

system of living on the country possible only to a very limited extent. Thus, railway communication has become a strategic factor of vital importance throughout a campaign. The railway systems crossing a frontier prescribe the lines of communication obligatory for invading armies. The manœuvre capacity of these armies is, moreover, to a considerable degree dependent on the lateral expansion of the railways, connecting the front with the provinces or parts which form their supply bases.

Yet Marshal de Saxe's famous aphorism that "in the legs lies the whole secret of manœuvre and battle," may be again verified in the next great campaign. Napoleon's methods of waging war are more closely studied to-day than they were twenty years ago, and Napoleon was a master of the art of training of his troops to march, and of taking full advantage of those troops being the best marchers in Europe. The first requisite for commanders, who aim at Napoleon's tactics, is to follow his example and those of Prince Eugene, Turenne, Hannibal, Marlborough, Lord Roberts, and, indeed, all great leaders, and make their armies thoroughly mobile. What was the secret of this mobility, and what standard can be hoped for?

The first thing that strikes one in an historical examination of the art of marching, is the appalling wastage which took place even under the immediate eye of Napoleon himself. Clausewitz, for instance, points out that when the great Emperor crossed the Niemen on 24th June, 1812, the centre of his army

had a strength of 300,000. At Smolensk, on the 15th August, he had but 182,000 left. Clausewitz estimates the actual casualties in the two engagements which had taken place between those two dates at 10,000; 13,500 men had been detached; the loss, therefore, in sick and stragglers within fifty-two days on a march of 350 miles amounted to 95,000 men, or one-third of the whole force. Three weeks later, at the time of the Borodino, the wastage (including the casualties in that battle), had increased to 144,000; eight days later, when the army reached Moscow, it was 198,000. Yet the roads were by no means bad, and the season of the year the most favourable for marching in those regions.

*"It was the immense mass of troops collected on one road, the want of sufficient subsistence, and an enemy who was retreating, but who was by no means in flight, which were the adverse causes."*<sup>1</sup>

Again, York's corps of Blücher's army commenced the 1813 campaign in Saxony and Silesia on the 16th August 40,000 strong. By the 19th October it had lost 12,000 men in battle, and 16,000 from other causes, leaving a total strength of but 12,000 at the battle of Leipzig.<sup>2</sup>

*"The Prussian Guards Corps, when it crossed the Rhine on the 3rd August, 1870, numbered about 30,000 bayonets. Of this number it lost about 8000 men at St. Privat. On the morning of Sedan it numbered*

<sup>1</sup> *On War*, by General v. Clausewitz, translated by Colonel Graham vol. ii. pp. 75-6.

<sup>2</sup> *Ibid.* p. 77.



13,000 men, of whom 350 fell in that battle. As it reached the suburbs of Paris, to take part in the investment, it was only 9000 strong. When the casualties in battle are deducted, it will be seen that, between the 3rd August and the 19th September, in forty-seven days, the corps lost, by fatigue and exposure alone, about 12,650 men. The infantry of the German army, when it made its first appearance before Paris, on the 19th September, 1870, had been reduced by one-third.”<sup>1</sup>

These figures, as well as the experience of every officer who has seen war, establish the need for the closest attention to all details alleviating the strain which marching entails on troops. Tactical considerations must, of course, override all else, when the moment for actual fighting approaches, but until that moment :

“The force may move on a considerably wider front than it would occupy in battle, and everything must be done towards preserving its fighting strength by careful arrangement of the marches, and seeing that the troops are adequately housed and fed” (Field Service Regulations, section 23).

The fewer the number of men and horses on any one road, the easier the march. The troops will suffer less from checks ; they will be able to maintain throughout a uniform pace ; they will accomplish the whole march in a shorter time and be saved greatly in fatigue, and when they reach their bivouac or billet, the period of waiting for the arrival of transport and food will be appreciably diminished.

<sup>1</sup> *The Art of Marching*, Furse, pp. 7-8.

The strain of marching is thus greatly eased, and the consequent wastage proportionately lessened. From that point, therefore, an army cannot march on too broad a front. On the other hand, the dispersal of its units on the march is obviously limited by strategical considerations, even when the enemy is at a distance, by both strategical and tactical requirements, as the actual fighting zone is approached, and in both cases—now that railways play so important a part in the feeding of an army—by considerations of supply.

*“No precise rules can be laid down for the degree of readiness for action with which a force should advance. Readiness for instant action demands the deployment of the force on all available roads, within the limits of the front on which it is intended to fight. But a large force which marches in this manner loses, to a great extent, its power to manœuvre; for, whilst it can move directly to its front or rear, it cannot easily change direction. It is, therefore, often advisable to defer the formation of a fighting front as long as it is possible to do so with safety”* (Field Service Regulations, part i. section 23 (1)).

The two opposing theories, strategical concentration and strategical deployment, are thus dealt with pithily in three concise sentences, and an even balance between them maintained. The closer examination of the principles at issue in that controversy may for the moment be deferred, but we may note at once that strategical deployment has at any rate this initial advantage, that it facilitates and eases the forward

match of the troops from the area of their original concentration.

Yet, even if enveloping strategy be adopted, political, or if not political, geographical conditions often limit definitely the frontage on which the immense national armies of Continental States can deploy. The eastern frontier of France may be studied, as a case in point; for, even though Belgium and the Duchy of Luxembourg be treated by an invader as available for his approach marches, the sea on the north and the Alps to the south form impassable barriers. Moreover, on any given frontage the number of roads suitable for military transport varies in all cases with the topography, population, and internal trade of the country. Thus, the Southern Vosges are pierced by but a few narrow passes, leading up to the crest-line through deep ravines, girt on each side with precipitous rocks and impenetrable forest. When the 2nd German Army traversed that region in 1870, the General Staff, though anxious to deploy as early as possible on a broad front, were forced to commit four army corps (the 4th, Guards, 9th, and 12th) to the Kaiserlautern Pass, a defile twenty-three miles in length.

When many roads cross its frontiers, a State may elect, as France has elected on its present eastern frontier, to deny to an invader their use in certain areas, by the construction in peace time of groups of forts too strong to be carried by a *coup de main*, and so impose definite limits to the avenues of approach available for his forward march.

Whenever, whether from natural or artificial causes, but a single road is available for a considerable distance for the advance of a large force, the difficulties of the advance become considerable, and, indeed, very great, if that road be an indifferent one. The Japanese 1st Army had to face such a task in its march from the Korean coast to the Ya-lu.

*"A reconnaissance had shown that the main road along the coast was the only one fit for the movement of a large body of troops. Two other roads ran parallel to it, but between them and the coast road there was no lateral communication, while the front of the army, if all three roads were used, would be not less than forty-four miles. That the bulk of the army must follow the coast road was inevitable, while to guard the right flank a detachment must be sent along the third road, which is farthest from the sea."*<sup>1</sup>

*"... It was quite evident that the whole army could not advance unless some fresh means of supplying it were devised. There was but one possible solution of the difficulty, namely, that the greater part of the army should march along the western road, and should be supplied from a succession of depots on the coast."*<sup>1</sup>

Save, therefore, a strategic flank guard detachment, this road was used by Kuroki's whole army, marching in echelon of half-divisional columns, a day's march between each division, and two to three days between divisions. On 9th April the army was cut in two, the bridge over the Taing river having been swept away

<sup>1</sup> v. *Official History, Russo-Japanese War*, vol. i. p. 75.

by a violent storm, and that over the Chechen river covered with two feet of swift stream. Yet these and other difficulties were ultimately overcome, though, from the date of the landing of the first troops at Chinampo, it took six weeks to concentrate the army at Wiju, a distance of but 130 miles.

Almost equally great difficulties were experienced by General Kuroki in his advance from Feng-huang-cheng two months later.

*"The advance was necessarily made by three separate roads (i.e. one for each division), and even so it was only through the excellent work of the pioneers that the transport was able to cross at all. With the exception of the main route from Seoul to Mukden, the so-called roads were, indeed, little more than tracks following the bottoms of the valleys, along which the troops were compelled to move in single file. The hills on either side rose to heights of from 150 to 600 feet, and it would seem that an enterprising enemy might have delayed the advance, even if unable to check it entirely. But the Russians made no effort to turn to account the natural advantages the country gave them."*<sup>1</sup>

Yet at the end of the month, after Motien-Ling had been occupied, the rain proved a more formidable enemy than the Russians. Transport ceased. The troops were placed for a time on half rations, and finally the 12th Division, to escape starvation, was ordered to retire twelve miles to Sai-ma-chi.

History teaches, our own experience teaches, that good marching is the outcome of training, forethought,

<sup>1</sup> v. *Official History, Russo-Japanese War*, vol. i. p. 257.

and proper organization. It has been said with reason that the legs are the most important weapon of the infantry soldier, and his fighting efficiency in that respect, as in all others, is directly proportionate to the attention paid by staff and regimental officers to his training. The past record of the British army is not in this matter wholly satisfactory. Crauford's Light Brigade, it is true, made that wonderful march to Talavera, which even when reduced from Napier's original assessment of sixty-two miles to forty or fifty in some twenty-four hours,<sup>1</sup> was an extraordinarily fine performance in the hottest season of the year for men carrying thirty to sixty pounds weight on their backs. Yet three years later, Lord Wellington, in writing to Lord Bathurst as to his army generally, admits that :

*"Neither officers nor soldiers are accustomed to march. The soldiers are very irregular, and, owing to their irregularities, are not able to bear the labour of marching in the heat of the sun."*

An officer serving in the Q.M.G's department of Wellington's Headquarters Staff notes, about the same date, in his private diary, "the admirable French system," and declares :

*"The French march around us. The first thing to be done to improve the British army is to train the men up in such a manner as to improve their marching, and this is only to be done by constantly practising them in marching."*<sup>2</sup>

<sup>1</sup> v. Analysis of evidence given in *Art of Marching*, pp. 230-2.

<sup>2</sup> v. *Memoirs of General Sir P. Bainbridge*, K.C.B., p. 65.

It is evident, in fact, that the standard of Wellington's troops was very uneven in the matter of march training and discipline. The Light Division continued to be brilliant. In the year after the Talavera march it covered in midsummer, over steep mountainous roads, a distance of forty miles in nineteen hours (31st July to 1st August, 1813) in its march to the bridge of Yanzi, and on arrival put in four to five hours' hard fighting.<sup>1</sup> Yet a month earlier, Wellington, writing again to Lord Bathurst, complains bitterly of the ill-discipline of his army in the pursuit after Vittoria.

*"I am quite convinced," he says, "that we have now out of the ranks double the amount of our loss in battle, and that we have lost more men in the pursuit than the enemy have, though we have never in any one day made more than an ordinary march."*<sup>2</sup>

The substance of the admirable standing orders, which Crauford had penned for the guidance of his troops on the march, is to be found to this day in Sections 24-33 of our *Field Service Regulations*, and has, in fact, been accepted by the British army for nearly a century. Yet the spirit of those instructions was not readily imbibed, and has from time to time been forgotten. The army manœuvres of 1892 and 1895 showed lack of march training, even in Aldershot battalions. Yet in 1898 General Gatacre's brigade made a fine march before Atbara—134 miles in six and a half days, and ninety-eight miles in the last four days—but the men had been specially prepared for

<sup>1</sup> *v. Art of Marching*, p. 233.

<sup>2</sup> *v. Ibid.* p. 210.

that task. The march records of British troops during the first six months of the South African war fail to show that the army as a whole had been trained to so high a standard, although allowance must be made for the number of reservists in the ranks and the long sea voyage. Yet, unlike Wellington's troops in the Peninsula, whose standard of marching seems to have been raised but slightly after five years of war, the marching powers of the British army in South Africa greatly improved with the hard work of the veld. In August, 1900, for instance, the 2nd Shropshire Light Infantry covered forty-three miles in thirty-two hours, and the City Imperial Volunteers thirty miles in seventeen hours, to prevent De Wet crossing the Krugersdorp-Potchefstroom railway.

The British soldier, in fact, lacks neither the moral or physical qualities requisite to produce a good marcher. His record, whenever and wherever he has been properly trained, rivals that of any other nationality. In this, as in other training matters, great progress has been made during the last decade and with remarkably satisfactory results. In the 1909 manoeuvres the infantry brigades made light of marches of nearly thirty miles, and at the end of the march advanced to attack with the dash and vigour of fresh troops.

Such distances cannot, however, be normally expected from a large column of all arms engaged in extensive operations, even though the troops be thoroughly seasoned and trained. In Napoleon's march of 1805 to the Rhine, the corps from Boulogne



covered 400 miles in twenty-seven days, an average of 14·8 miles a day. Lord Roberts' force in the Kabul-Kandahar march averaged 14·6 miles. The German 2nd Army (three army corps and a cavalry division), in 1870 averaged nearly twelve miles a day in a twenty days' march from the Moselle to the Loire. In the Valley campaign of 1862, Jackson's brigade marched 674 miles in forty-eight days, an average of fourteen miles a day. Our *Field Service Regulations* have, therefore, good historical justification in fixing the limit of "an average march under normal conditions for a large column of all arms" at fifteen miles, "with a rest at least once a week."<sup>1</sup>

The average distance which troops can march comfortably without strain, depends, moreover, upon their moral and physical condition, the size of the column, the state of the weather, the condition of the road, the climate, the abundance of supplies, and the weight which the soldier is required to carry, in addition to his arms and ammunition.

"*Forced marches should be resorted to only when the expenditure of fighting power thereby entailed is justified by the object to be gained. If troops are called upon to make a special effort, they should be made to understand that it is for a specific object*" (*Field Service Regulations*, section 26 (5) ).

The examples of the Light Division in the Peninsula and of the Shropshire Light Infantry in South Africa have been already cited. In November, 1885, a Bulgarian regiment is related to have covered, over a

<sup>1</sup> *F.S. Regulations*, part i. section 26 (4).

rough country, sixty-three miles in thirty-two hours, "through the snow and the slush and the rain, now knee deep with mire, now on solid ice,"<sup>1</sup> the motive of the march being to take part in the battle of Slivnitza. It is said to have lost in this march but sixty men out of a total strength of 4500. A more modest, but perhaps more reliable forced march is that of the Japanese 29th Kobi Regiment, in August, 1904, when summoned from the line of communications to join Kuroki's army for the battle of Liaoyang. The order found the 1st battalion at Antung, the 2nd at Feng-huang-cheng. The 1st covered 113 miles in five days, the 2nd, eighty-five miles in four days; but thirty-eight men fell out in the whole regiment.

In all these cases there was a strong motive spurring the units to exceptional exertion. Moreover, excepting that of the Light Division's march to Yanzi bridge, the columns were comparatively small. With a large force on one road, the difficulties of rapid marching increase in proportion to the size of the force. Clausewitz estimated that a division can cover fifteen miles along a level road in eight to ten hours, on a hilly road, in ten to twelve hours. If several divisions were united in one column, he considered that the march would take a couple of hours longer.<sup>2</sup>

Clausewitz's divisions were, however, but 8000 strong. A modern British division, with its 18,673 officers and men, 6161 animals, 100 guns (including

<sup>1</sup> *v. Chronicles of a Virgin Fortress*, W. von Herbert, p. 247.

<sup>2</sup> *On War*, vol. ii. p. 69.

machine guns), and 640 vehicles, occupies twelve and a half miles, and even this does not include its transport train or ammunition column. Yet the French Staff contemplate three divisions marching on one road, and at a pinch, even five. It is quite evident that mobility with columns of this magnitude is a very different matter from marching weak brigades of under 3000 men, some twenty-eight to thirty miles at army manoeuvres. We may feel, and not without reason, satisfaction at the hard condition and good spirit of our battalions at the end of the training season, but a good deal more than regimental fitness is needed to move, handle, and maintain an army of 60,000 to 100,000 men on one road. Moreover, fifty per cent. of such a force will be not men in the pink of marching condition from the continuous preparation of company, battalion, brigade, and divisional training, but reservists with muscle and feet unused to long hours of marching with the weight of rifle, ammunition, rations, and kit. Yet, as we shall see later, if we hope to fulfil the obligations of international friendship, and to assist with our Expeditionary Force other armies in their time of need, we must learn from a study of continental methods, the art of marching in mass, and of attaining a mass mobility, which will enable British divisions to play their part in the decisive stroke. The development of motor transport has no doubt considerably smoothed the chief difficulties of this crucial problem. But the necessities of the case may best be summed up in the words of the present Director of Military Operations:

“(a) The men must be able to march far and continuously by day and by night.

(b) Full use must be made of railways, trains, etc.

(c) The men must be as independent as possible of their supply trains, and, therefore, should carry two, three, or four days' rations on their persons.

(d) The mobility of supply and transport must be developed to the full by auto-transport.

(e) The army must know how to requisition and billet.

(f) And, last and almost most important, the force must be based on an arc or broad base, and alternative lines of communication arranged for.”<sup>1</sup>

<sup>1</sup> *v. Initiative and the Power of Manœuvre*, by B-General H. H. Wilson, C.B., D.S.O., p. 7.

## CHAPTER XVII.

### BILLETS AND BIVOUACS.

(This chapter is an adaptation, by permission, of a memorandum on billeting issued to the Southern Command on November 6, 1911.)

THE general principles governing billeting in war time are clearly set forth in *Field Service Regulations*, part i. section 50. Yet in our army the importance of billeting is not as fully realized as it should be. There are not a few reasons which account for this imperfect appreciation.

In the United Kingdom the law does not permit general billeting in peace, and, consequently British troops do not enjoy the advantage of the practice in this important matter which continental armies receive yearly during manœuvres. Moreover, apart from want of practice in actual billeting, our officers fail to accustom themselves to the idea.

Except in the Crimean war we have not waged war in a civilized country in a temperate climate, for nearly a century. The Crimean war, it is true, afforded appalling lessons of the necessity of shelter, but fortress warfare has characteristics of its own, and there has been a tendency to imagine that billeting and

other arrangements for shelter are peculiar to sieges, and have little relation to field operations.

Bivouacking during manoeuvres is limited to a very few nights at almost the finest time of the year. Thus, it is seldom learnt how serious a drawback bivouacking may be to the efficiency of an army when the weather is at all unfavourable, even in the summer, or when bivouacking continues for any length of time.

• Officers working during staff tours in a warm, well-lit hotel sitting-room fail to realize the effect on the health of the troops of the many nights which they condemn them—mercifully on paper—to pass in the open. In the summer there is a general impression that troops are just as well or even better sleeping out of doors as in camps and barracks. So long as it is neither cold nor wet, and so long as food for men and horses is sufficient, this may be the case, but how is it possible to ensure that conditions which are promising at 5 p.m. will be equally favourable at 2 a.m.? History shows that on service a few cold nights, a few wet bivouacs—without even the additional accompaniment of short rations—will shatter these optimistic peace theories.

The German *Official History of the 1870 War*, alluding to the advance of the 1st and 2nd Armies to the Nied and Moselle, states that the contracted front on which the troops marched rendered billeting difficult, and that in consequence repeated bivouacking became unavoidable. There was a good deal of rain, and, although the operations were taking place in August,

bivouacking had so injurious an effect on the health of the troops that, in one division which had never been under fire, 582 men had to be admitted to hospital. V. der Goltz and other military writers refer also to the miserable time experienced in bivouac during the early part of the war.

Officers, moreover, do not always appreciate that the effect on horses of cold and wet is even greater than on the men. The *Field Service Regulations* of all armies grasp this fact, and postulate that the mounted arms are to have the preference when accommodation is insufficient. Obviously this preference is conceded for the sake of the horse, and not for the mounted man, since it cannot be said that the mounted personnel endure more fatigue than the infantry.

There is one sentence common to the *Field Service Regulations* of England, France, Germany, Austria, and Russia. It is that the worst billet is better than the best bivouac. Most of the Regulations quote it as a soldier's proverb.

During the 1870 war the 62nd "March" Regiment, raised at a strength of 3600 men on the 5th December, joined the 16th French Corps on the 9th December, and had lost 1325 men (36·8 per cent.) by the 14th December, without having come under fire. The weather was severe, and three companies had no overcoats. Full use was not made of billets owing possibly to the indifferent discipline of the troops. As Balck, commenting on this incident, says, "A few nights unnecessarily passed in the open are comparable with an unsuccessful engagement."

It is not only that billets, even the most crowded of close billets, provide some shelter for the individual, but also, and this is almost as important, they allow cooking to be done, clothing to be dried, and arms to be kept serviceable. Even the most miserable of tumble-down cottages makes all the difference in this respect. Thus, the Prussian *Official History of the War of 1866*, in commenting on the movements of the Austrian army immediately prior to the battle of Königgratz, says that "Its concentrated state only admitted of bivouacking, thereby weakening the strength of the troops, and opposing the greatest obstacles to all further movement." This, it should be remembered, was in midsummer. The history of modern war is full of similar examples, showing the importance which should be attached to shelter, and it cannot be realized too clearly that only the gravest tactical reasons or the absolute absence of accommodation can excuse a Commander from making the fullest use of it on every occasion.

This question of tactical necessity is, unfortunately, often erroneously dealt with in paper schemes.

Troops are obviously more ready to meet the unforeseen when in bivouac than when scattered in billets. Attacks develop so swiftly on paper, and the difficulty of appraising justly the comparative fighting efficiency of troops, according as to whether they have passed the night in bivouac or in billets, is so great that the desire to bivouac (on paper) on every possible occasion can be well understood. But it is dangerous to imagine that this constant holding of troops in a



state of extreme readiness enables them to meet every emergency, and has no drawbacks. The tactical necessity for bivouacking must, in fact, be real, and must be sufficiently strong to outweigh the loss of fighting efficiency which will certainly be incurred, in a greater or less degree according to the weather. The decision in this matter must, as a rule, be a matter of compromise, for in actual war tactical requirements must often give way to the preservation of the efficiency of the troops. When the weather is favourable we find the bulk of the troops billeted, even when the enemy is close. When the weather is bad we find that, except for the actual sentries, even the outpost line is under cover.

Thus, at Beaugency, Le Mans, and during the nights of the three days' fighting in the battles of Loigny-Poupry and Orleans (December 2nd to 4th, 1870), every available atom of accommodation was used by the troops under Prince Frederick Charles and the Grand Duke, and even the outpost lines took advantage of any shelter that existed. Neither on the night of the 2nd nor of the 3rd December was the tactical situation free from anxiety; but the weather was bitter, and billeting was, without doubt, fully justified by the increased efficiency of those troops who were lucky enough to obtain shelter and warmth.

Speaking of an incident which occurred at Beaugency, Von der Goltz says: "*Even if a body of troops be for once surprised, and suffer loss, yet this disadvantage is as nothing compared with that which results to the*

*troops when, from fear of such disasters, they are made to bivouac permanently in the open."*

A still more remarkable example of the apparent neglect of the tactical situation in favour of maintaining fighting efficiency, is to be found in the night arrangements made on the German side during the three days' fighting on the Lisaine in January, 1871, between the 14th German Army Corps, covering the siege of Belfort, and the numerically vastly superior French army under Bourbaki. The first evening of the battle found the German army still in their positions, but the situation was full of anxiety. Nevertheless, the whole of the German troops, with the exception of an outpost line, went into billets, the bulk of the men being marched back some four or more miles, in order to obtain the necessary shelter.

On the second evening, the situation for the Germans appeared to be perilous in the extreme. Their right flank had been practically turned, their outposts were in contact with the enemy more or less along the whole front, and their disparity in numbers was becoming a more serious factor than it had hitherto been. Alarms and fighting continued during the night, and prevented the whole of the force being withdrawn to obtain shelter. Troops had, moreover, to be moved to the threatened flank, but even in such a situation the bulk of the troops went calmly back to billets. The wisdom of this course was fully justified by the events of the third day when the threatening turning movement of the French collapsed. Their troops,

half-starved and frozen, had completely lost their fighting efficiency.

It is, however, to be observed that in both the cases above quoted the neglect of the tactical situation, in order to conserve the energy of the troops, was more apparent than real. The German leaders realized that the conditions were such that nothing serious was to be expected from an enemy who, after fighting all day, might attempt to attack at night in that bitter weather, and that, consequently, the ultimate issue depended on the physical—and consequently moral—condition of the troops.

This is a point which must always be borne in mind when considering tactical problems. Unless due weight is given to it, troops will soon be worn out by unnecessary hardships, incurred because the Commander has given an undue proportion of his thoughts to the map and has insufficiently appreciated the limitations of the physical efficiency of his own force and that of the enemy.

*“Bivouacs give concentration and readiness, but are trying to the health of men and horses, and should only be resorted to when tactical considerations make it imperative to do so” (Field Service Regulations, part i. section 45).*

Owing to these advantages of concentration and readiness, bivouacs, despite their drawbacks, have in the past been used for the accommodation of ill-trained and ill-disciplined troops, in order to fulfil tactical requirements, when better trained soldiers could have been trusted in billets. Much of the heavy

loss sustained by the French troops under d'Aurelle de Paladines and under Bourbaki, in the winter of 1870-71, was due to the reluctance of their Commanders to put slightly trained troops into billets when rapidity of assembly was essential.

Another disadvantage of bivouacking troops is that concealment becomes more difficult. A well-known example of this occurred during the operations which ended in the second capture of Orleans in December, 1870. The fog of war was unusually thick, and neither the German Headquarters Staff nor Prince Frederick Charles had any definite information as to the position of the French army covering Orleans. But one evening towards the end of November, the smoke of the French bivouac fires at Gidy and Cercottes was plainly seen from the church tower at Pithiviers, twenty-four miles distant, and deductions of value were consequently made.

With the advent of the aeroplane and airship, concealment of troops, when not in actual movement, becomes increasingly important. The position of hostile troops in *bivouac* can be no secret to a staff officer reconnoitring from the air. Even at night he should be able to form a good estimate as to numbers. It is not, of course, suggested that troops in *billets* will always evade the eye of the aeroplanist, but he will seldom be able to form even an accurate estimate of numbers, and at night will often be unable to detect whether a village is occupied or not.

"In close billets as many men and animals as possible are billeted, and the remainder bivouac. Close billets

are adopted when a greater state of readiness is required than is possible in ordinary billets. For this reason, tactical considerations invariably have precedence over considerations of comfort in close billets, and arms and units should never be mixed" (*Field Service Regulations*, part i. section 54).

In our army, therefore, close billets imply always a greater degree of readiness, and differ somewhat in this respect from the German "Ortsbiwak" and the French "Cantonnement bivouac," which include in their meaning a concentrated form of billeting due to insufficient accommodation, as apart from the question of a greater degree of readiness.

In close billets every atom of accommodation must be taken up. The inhabitants will be squeezed if necessary into a single room, men will sleep packed as closely as possible in passages, cellars, outhouses, and every place where shelter of any sort can be found. Those who cannot get cover bivouac outside, utilizing the lee side of walls, banks, haystacks, etc.

Ordinary billets provide the largest amount of shelter and comfort, at the cost of corresponding dispersion and consequent delay in assembly. Our *Field Service Regulations* lay down that, in the absence of local data, it may be taken that ordinary billets with subsistence can be provided by an area for a force about equal to twice its total population for one week, and that without subsistence billets can be provided at the rate of about ten men per inhabitant in rich agricultural districts, and at the rate of about five to six men per inhabitant in town or industrial

districts. The same figures are given in the French *Vade-Mecum de l'Officier d'Etat-Major en Campagne*. Most continental military writers advocate a considerably greater dispersion.

It should not, however, be taken that, when the conditions allow of the necessary dispersion, an allotment on a much less contracted basis would not be preferable. It has been found that when troops have to be billeted for a considerable time in one spot for training purposes in their own country, an allotment in towns of one man to every three inhabitants without subsistence usually permits the convenience of the civilian population to receive full consideration. Moreover, during preliminary concentrations, when the enemy is yet at a considerable distance, or during armistices, when the conditions regarding assembly can be satisfied, it would seem preferable, from the point of view of health and comfort, during rests of any duration, to distribute the troops sufficiently to permit of an allotment of not more than one man per inhabitant with subsistence, or three to four men per inhabitant without subsistence, in rich agricultural districts. These figures are given fairly unanimously by the best accredited continental military writers as the maximum allotment of men to inhabitants under such conditions. The question of supply ("disperse to live") may even involve considerably greater dispersion.

On the other hand, seeing that our *Field Service Regulations* limit the term "Close Billets" to billeting under conditions of peculiar readiness, it is necessary

to extend the meaning of "Ordinary Billets" to include those cases of billeting (which will probably form the vast majority during active operations) where, without any reason for extra readiness, troops have to avail themselves of shelter to the degree laid down for close billets, merely because the available accommodation is totally insufficient for ordinary billeting at anything like the scale suggested in *Field Service Regulations*.

For instance, the case may be taken of a division or larger formation advancing on a single road, and halting for the night with the intention of continuing the march on the following day. If the enemy is not within close striking distance, tactical requirements of extra readiness will not exist, and the main body of the troops will probably billet in an area nearly equal in depth to the length of the column, and limited as to breadth by the proviso laid down in *Field Service Regulations*, section 45 (5). But it will often be found that the available accommodation in that area is quite insufficient for the numbers requiring shelter, except under the conditions of close billets. On the principle that the worst shelter is better than the best bivouac, the accommodation must be used to the utmost, and those troops who cannot get in must bivouac.

If the nearness of the enemy renders a closing-up of the column advisable, then the available accommodation is still more reduced, without, however, necessarily imposing a peculiar degree of readiness on the bulk of the troops.

It follows, therefore, that during active operations the conditions of ordinary billets will often, if not generally, approximate more or less closely, according to the density of the population, to those of close billets, unless any peculiar degree of readiness should be imposed by tactical requirements.

It may be of interest to quote some historical examples of close billeting.

Hasenburg (twenty houses), during the night of the 11th to 12th August, 1870, accommodated two squadrons of Uhlans and an infantry regiment (three battalions). Two companies (four to a battalion) were placed in the church.

Besace, 3rd September, 1870, with 400 inhabitants, accommodated 170 wounded French, a Regimental Staff, and three battalions.

Warck, 27th August, 1870, with 160 inhabitants, took in two battalions, two batteries, and three field hospitals. Every man got shelter in a house.

Grimaucourt, 23rd August, 1870, with 100 inhabitants, accommodated a battalion, the men being in houses, stables, and barns. Cooking had to be done outside.

It has been already remarked that the natural desire not to be caught napping is responsible for much unnecessary bivouacking, and for much unnecessary closing-up of columns, with a resultant decrease of available accommodation; the serious effects of such a course of action have been pointed out.

In the two great wars of the latter half of the last



century, at the beginning of operations, bivouacking, if not the rule, at any rate was often practised. As the campaigns progressed bivouacking became less and less common as commanders learnt their lesson in the hard school of experience. The war of 1866 did not, perhaps, continue long enough for the lesson to be completely rubbed in, but in the war of 1870 a stage was reached where (admittedly in exceptionally bad weather), even the front line of the outposts availed themselves of such shelter as was to hand. It is impossible, however, to lay down precise rules as to when bivouacking must be resorted to as a *tactical* necessity. Every case must be decided on its merits, and the requirements of tactics cannot be settled without thought of the bodily condition which may make tactical operations possible or impossible on either side.

Yet it may be postulated that, when out of close striking distance of the enemy, tactical reasons will seldom exist for bivouacking any troops other than the outposts, and that, under such circumstances, at least the supports and reserves of the outposts may be billeted in close billets, if accommodation be available. It will often be advisable to select the positions of supports and reserves, with a view as much to accommodation as to tactical requirements. As regards the main body there should be no tactical reason for closing-up the column, and good reason against such a course. It will, therefore, usually billet in depth equal to the length of the column on the march. Considerations of supply and command

would generally forbid a greater depth than this of the billeting *rayon*.

If an attack on the enemy's position is to be carried out on the morrow, and the force is on, or close to, the positions from which the attack will be launched, it may be necessary to pass the night in position. Here the outposts will be in contact with those of the enemy, and will probably bivouac entirely, except in very inclement weather, such as was experienced during the People's war. The main body, closely concentrated, would be in close billets, which in this case, *owing to dearth of accommodation* rather than to tactical requirements, would usually mean a general bivouac, except for staffs and perhaps reserves. If a defensive position is to be taken up, the conditions as regards bivouacking and billeting will be practically the same.

Troops who have gained a position during the course of a battle, when night leaves the final result still undecided, will probably have to bivouac, rifle in hand. Even for the reserves and transport there may be little shelter, owing to all available accommodation being required for the wounded. The nights after the battles of Vionville and Noisseville were passed in bivouac by the German troops in a state of extreme readiness.

In cases where the day's march brings hostile forces into comparatively close distance from one another, and appearances point to a battle of encounter on the morrow, tactical requirements *may* render it advisable to close up the column, with the consequent disadvantage of obliging an increased proportion of the force

to bivouac. Before, however, deciding to close up his column, a commander should consider whether such action is absolutely necessary for safety, and to what degree he can limit it. He must remember that, if his force has to resume column of march on the morrow, he has gained nothing, and has lost a certain amount of fighting efficiency. He will naturally be swayed very much by what he has ascertained of the enemy's previous movements, and by the adequacy of the arrangements which he himself will make in order to obtain timely knowledge of any movement of the enemy during the night. For example, if he knows that the enemy has been making long marches daily, the latter is not likely to undertake a night march, with all its risks and extra exertions, unless the tactical or strategical necessity is very obvious.

Again, he should reckon on gaining information of any move on the enemy's part in sufficient time to turn his own troops out of their billets, and he must not forget that, though it is true that it will take some time to bring his own troops from their places of assembly to the position of defence, yet, on the other hand, the enemy has to deploy from column of route in order to attack, and that the time taken over that operation will generally be comparable at least with the delay which has ensued on his own side.

Such points require serious consideration before a commander decides to decrease his available depth of billeting area, and thereby compel a larger proportion of his force to bivouac.

In the earlier stages of a campaign, when the enemy

is yet at a considerable distance, and the army is moving forward covered by its protective cavalry, billeting can be, and should be, carried out under the detailed arrangements given in *Field Service Regulations*, part i. section 5 (1) and (2), and section ii. of *Special Instructions for the Utilization of the Local Resources of a Country by an Army in the Field*.

The points which should receive attention in allotting billets are very fully set out in sections 45 (4) and 51 (4) of *Field Service Regulations*, part i.

When operating in a country whose inhabitants are hostile, it will usually be advisable for the billeting parties which move with or behind the protective cavalry to have a small escort. In the war of 1870 many incidents occurred of billeting parties being killed or captured in villages through which German troops had marched but a short time previously, and which were supposed to be quite safe.

When opposing forces get into closer contact, the detailed arrangements prescribed by the regulation may often be found impossible to adhere to.

"In any possible theatre of war in Western Europe, there will usually be employed a single method of quartering the troops when once operations are in full swing. On completion of the day's march the troops will be distributed immediately over every locality within reach, with utter disregard of rules, billeting tables, or statistical data, and each unit will make itself at home in some village" (V. der Goltz).

This does not, of course, mean that billeting parties will not be sent out, if possible, in advance, but only

that time will usually be wanting for much pre-arrangement in the way of dividing up the larger billeting areas, chalking the doors, etc., etc.

The allotment of billets to mounted troops requires particular attention. As already explained, it is even more important to bring horses under shelter than men. It is obvious that it will seldom happen that all the horses of a mounted unit can be accommodated in a single brigade area, and (as contemplated in *Field Service Regulations*, part i. section 50 (2).), it may be necessary to mix the arms. The *Field Service Regulations* of Germany, France, and Austria go further than this, and say that it *will* be necessary to mix the arms, and this will probably be found to be the rule rather than the exception.

Except, therefore, in "close billets," full advantage must be taken of all stabling and of all shelter capable of accommodating horses, throughout the billeting area, in order to accommodate the horses of mounted units, whenever time will admit of this being done.

Whether the detailed method or the rapid method be employed, every care should be taken to clear the main line of advance as quickly as possible. If billeting parties have been sent on in sufficient time to make the necessary arrangements, there should be no difficulty in marching units direct to their alarm places before dismissal, as laid down in section 48 (2), *Field Service Regulations*, part i. If billeting parties have only been able to precede the troops by a few minutes, or if it has proved impossible to send them forward at

all, it will be necessary to allot brigade areas before the troops leave the column of march. Once this has been done, the troops to occupy a brigade area should at once be moved into it, either into side streets, fields, etc., *so as to unblock the main road as quickly as possible.* The detailed allotment in the brigade area can then proceed. When the alarm posts have been chosen, the troops should be moved to them preparatory to dismissal.

*Field Service Regulations*, part i. section 48 (2) details the information which each individual should have before dismissal to billets. General V. Manstein, in an order issued to the 9th Corps during the war of 1870, directed that before dismissal every unit should be informed of the method of supply for the day, in order that no excuse should exist for pillaging.

The orders which would be issued by the commander of a billeting area occupied by a division would usually comprehend instructions on the following points:

(i) Sub-division into brigade or group areas (this would usually be issued with either the "march" or the "halt" orders of the Divisional Commander).

(ii) Position of general alarm post, and any special instructions in connection with the "alarm."

(iii) Instructions as to inlying picquets.

(iv) State of readiness ("close billets"—"constant readiness").

(v) Watering arrangements.

(vi) Position of refilling supply points for following day.

•(vii) Closing of public houses, use of fire and lights both by inhabitants and soldiers, fire picquets (if necessary).

•(viii) Position of Divisional Headquarters.

The orders issued by the commander of a brigade or group area would follow the same lines, dividing the area among units, and notifying the position of the guard detention room. If the column is organized in groups, points (ii), (iii), and (v) above would be dealt with by the group commander.

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